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STUDIES IN ADMINISTRATION

THE NATIONAL GOVERNMENT AND PUBLIC HEALTH

BY

JAMES A. TOBEY, M. S., LL. B.
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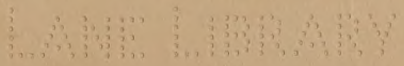

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PREFACE

In 1923 the Institute for Government Research published its volume entitled "The Reorganization of the Administrative Branch of the National Government." That volume had for its purpose to consider the problem of the regrouping of the administrative services of the government from the most general standpoint. It sought to determine the principles upon which those services should be grouped departmentally and the character of grouping that would result if those doctrines were put into practice. These principles, which have received general acceptance from those who have given consideration to the problem during recent years, are: That all the operating services of the government, except those that are of a quasi-judicial or quasi-legislative character should be brought within a departmental grouping, thus restricting within the closest feasible limit the number of independent establishments; that the principle of grouping the services departmentally should be that of bringing together in the same department all services having to do with the same general purpose; and that, as far as practical considerations permitted, each department should be unifunctional in the sense that the services comprehended by it should have to do only with the same general purpose or function.

Though, as stated, these principles have received general acceptance, certain difficulties are encountered in attempting to put them into practice. In the first place, rigid adherence to the principle of unifunctional departments would necessitate an addition to the number of departments now in existence, a step which, for various reasons, is generally deemed inadvisable. Secondly, there are certain general functions, to the performance of which the national government is committed, which, though clearly distinguishable, involve activities which are of direct concern to other operating services falling within other departmental groupings. For example, the promotion and protection of the health of the Indians is manifestly a part of the general function of the

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promotion and protection of the public health, but, at the same time, it is an integral part of the work performed by the National Government for the care of its Indian wards.

These two difficulties can be met in the following way: The first by the creation of bi-functional departments; that is by the creation of departments which will embrace services having to do with two functions which, though distinct, have a close relationship to each other; and the second, by the adoption of the principle that one department shall act as a supply or contracting agency for the performance of activities falling within its field which constitute essential parts of the work of other services or departments. Thus, to illustrate, it is possible, and probably desirable, at the outset at least, to create a Department of Public Works and Public Domain instead of two separate departments, one each for public works and public domain. In such a department, the services having to do with each of these subjects can be separately grouped under an Assistant Secretary; and most, if not all, of the advantages of bringing together under a common direction of services performing the same general functions are thus secured.

A second aspect of administrative organization appears when the primary purpose of one department is also a secondary purpose of another. A duplication of agencies to carry out this purpose is unnecessary. It is possible for one service, such, for example, as the Public Health Service, to act as the agency for performing the work of making physical examination of immigrants for the Immigration Bureau, thus avoiding the necessity for the latter service to organize a technical division of its own for such work.

This statement of the general problem of the grouping of services departmentally has been given because it is impossible to consider the special problems of the grouping of any particular class of services or activities without having clearly in mind the points that have been mentioned. Especially is this so in respect to the services and activities to which the present volume relates, those, namely, having to do with the promotion and protection of the public health. As will appear in this volume, the national government is now maintaining at least eight distinct services whose principal or major function falls within the field of the promotion of the public health. In addition to these, there are a score or more of other services some of whose activities are more

or less connected closely with the public health. These services are scattered among the several departments. The prosecution of such work by so many different agencies raises very distinctly the question as to whether this distribution, which has resulted from no deliberate plan, is one best adapted to meet the ends sought. Viewed either from the standpoint of economy or that of efficiency, would it not be possible to improve this situation to a considerable degree by steps looking to the centralization under a common direction of those services which have as their major function the promotion of the public health, the assignment to such central agency of specific activities in the field of public health now being performed by other agencies as incidental features of their other work, and the larger use of this centralized service by other services as a supply or contracting agency to do for them work of a public health character in place of organizing and operating distinct services of their own for this purpose?

These questions can be answered only after a most searching inquiry into all the work falling in the field of public health promotion and protection which is now being done by the several administrative services of the government. Such an inquiry should disclose the reasons why such work has been undertaken, and the relation that such work in each case bears to the other activities of the services performing it. It should extend to the advantages that might be expected to follow from having the public health activities more largely performed by those services whose major or primary function is that of public health promotion; and it should examine into the advantages of the grouping of these latter services under a common direction, either as a department of public health, or as a group of services under the direction of an assistant secretary in a department having charge, in addition, of some other primary function, such, for example, as education.

The present volume gives the results of such an inquiry. If it errs at all as regards scope it is on the side of comprehensiveness.

A word should be said regarding the circumstances leading to its inception. A group of distinguished sanitarians of national reputation, leaders in the field of American public health, came together as an informally organized National Health Conservation Commission, with Dr. Haven Emerson, Professor of Public Health at Columbia University as its chairman, for the purpose

of considering primarily how the work being done by the National Government in the field of public health could be put upon a more satisfactory basis. A committee of this group waited upon the President of the United States for the purpose of placing before him its views in respect to the desirability of the establishment of a greater centralization and coördination of the public health work of the government. The result of the conference was an indication that until a thorough investigation should be made of the issues involved, there was small likelihood of any action. It was in response to this situation that the National Health Conservation Committee requested the making of the present study, which Mr. Tobey has also offered in partial fulfilment of the requirements for the doctorate in public health at the Massachusetts Institute of Technology. The results are published in printed form in order that they may be available not only to the Commission and to the President but also to members of Congress and all others whose coöperation is required if action upon the recommendations is to be had. It is hoped also that this volume will present information of value to all persons interested in the public health problem.

W. F. Willoughby.

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THE NATIONAL GOVERNMENT AND PUBLIC HEALTH

PART I

THE RELATION OF GOVERNMENT TO HEALTH

CHAPTER I

INTRODUCTION

Of the hundred or more major administrative units of the United States Government, at least forty are concerned directly or indirectly with some phase of the public health. This does not mean, of course, that all of these bureaus, divisions, or other branches of the executive departments carry on health work as a major activity. In many instances the health work is of minor concern in the more extensive scope of a particular bureau. Sometimes it comprises only a small fraction of the activities of the bureau, or it may be entirely a side issue. In at least eight instances, however, public health constitutes the principal or only function of as many different bureaus or divisions, while in a number of others it is one of several primary duties of the bureau.

The purpose of this book is to describe in detail the public health activities of the United States Government. In addition to such a description, a critical analysis of this public health work is attempted, and a plan for its correlation is suggested. The coördination of Federal health organizations has been advocated for many years by sanitarians who have watched the growth and development of such administrative units. That some form of effective correlation is now essential, is conceded by all persons, public health workers and political scientists alike, who have studied the problem. In this book will be given the reasons why more efficient results in the conservation of national vitality could

be attained by a more business-like arrangement of the present public health work of the government.

At the outset it should be stated that no new duties are recommended, nor is there any advocacy of expansion. Furthermore, the true scope of Federal health powers, as allowed by the Constitution, is adequately recognized. The first part of the book deals entirely with the relationship of health to government, and particularly the proper sphere of Federal activities for public health. This is discussed according to the present accepted legal, political, sociological, and economic theories which apply, with particular attention to the practical utility of such theories. Since, under our form of government, the promotion and protection of public health devolves primarily upon each individual state, a chapter in Part I is devoted to a discussion of the relation of the Federal Government to state and local health administration.

A review of the literature on public health and also on political science shows that very little, if anything, has been written in this country on the relation of government to health. That is, there is to be found practically no thorough philosophical discussion of public health as an essential function of sovereignty. There are, of course, many works which give reasons for doing health work, or argue how public health should be officially administered, but none of them discuss the theory of government and the nature of its essential functions, demonstrating that health promotion is properly one of them. Perhaps this fact is taken for granted, as well it might be. In England more on this important subject may be found.[1] The general relation of government to health is too important to be passed over without notice and without a consideration of some of its more important aspects, especially as they form a logical introduction to this volume.

Part I, therefore, is concerned with the relation of government to health. It explains the modern science of public health, how it is administered in the United States, the constitutional basis for Federal health activities, their evolution and development, their present status, and their relation to local public health administration.

[1] Particularly, W. A. Brend's, Health and the state (1917). Dutton.

Part II presents a description and analysis of each of the administrative units of the National Government which are now undertaking public health work of any kind. The history and development of such activity is recounted, the present organization, personnel, and appropriations outlined, and the scope of its operations and their practicability indicated. An endeavor has been made to represent the health work of each bureau in the light of its true importance in the scope of that bureau and in its interrelationships with other bureaus or other units. Considerable space is accorded to the historical basis for much of the work. These facts reveal the reasons for the allocation of certain branches of work in the past and demonstrate why and how the activity has developed, considerations which may be of weight in endeavoring to effect practical coördination.

Every type of health activity indulged in by the Federal services is included in this book. Many items may appear to be rather indirectly concerned with this topic, or even only allied to it in a very remote way. No endeavor has been made to include every possible activity which by any stretch of the imagination could possibly be classed as in the domain of health, merely in order to make a striking case for the ramifications of the subject in the Federal executive departments. On the other hand, a complete picture is desirable, and so an attempt has been made to present thoroughly a description of every type of actual health activity, even though many such functions would by no means be involved in any correlation scheme, or would be only slightly or partially affected by such a plan. It seemed better to err on the side of completeness, rather than that of superficiality.

Although actual duplication of effort is not so great as would be expected, when some forty branches of the government are doing public health work and doing it, in the main, independently, nevertheless there is some overlapping. This is discussed in the final chapter of Part II, and specific examples of duplication are cited. These considerations obviously assist in pointing the way to more efficacious correlation.

Part III contains a definite scheme for the coördination of our Federal health activities. The many previous attempts along similar or remotely comparable lines are summarized and discussed. Here again, these past ventures are interesting and important

factors when future plans are to be considered. The outline of correlation as presented has been submitted to many eminent sanitarians, experts in political science, and other persons interested, as well as to chiefs of bureaus involved, and it embodies, so far as possible, the ideas and recommendations of these individuals. It is believed to be practical, legal, and logical. It demonstrates an actual saving in annual expenditures and, what is of even greater significance, points the way to more efficient production, which in itself is true economy. Nor is it unreasonable to predict that improvement in the methods of conserving national vitality will, in the course of a few years, result in government savings in funds now needed to administer relief and cure for conditions which are not only remediable but preventable.

Information has been secured from reports and bulletins of the various bureaus, by personal visits and interviews at the bureaus and with various Federal officers, from the Service Monographs on the United States Government, prepared by the Institute for Government Research, and from numerous other sources. In nearly every instance, the description of a bureau has been submitted to the chief of the bureau for comment, correction, and criticism. The data are, therefore, believed to be reliable and accurate and of reasonable value for the purpose intended, which is to demonstrate how and why Federal health activities should be correlated.

CHAPTER II

THE DEVELOPMENT OF THE RELATION OF PUBLIC HEALTH TO GOVERNMENT

The protection and promotion of the public health is now conceded to be the duty and privilege of any sovereignty. "The government," wrote Herbert Spencer, "which does not diligently protect the health of its citizens is neither intelligent nor moral." The idea that the care of the public health is a proper function of the State is, in fact, an ancient one, though the real science of public health is comparatively new. Disease is as old as mankind itself, and society from its inception has realized the necessity for organized efforts against it. From the dawn of civilization man has been coping with this ancient foe, not merely as an individual, but in an organized manner. The promotion of the health of the people as a whole is too important a duty to be entrusted solely to uncoördinated, individual action. As society has evolved into states, this doctrine has been adopted without question, though the procedure has often given rise to conflict. History, to which we look for precedent and inspiration, shows the fact to be true. Modern sociology confirms it.

Public Health in History.[1] Recorded history began some six thousand years ago. The labors of the archæologist have revealed that the earliest known civilization was that of the ancient Sumerians, who inhabited the broad valley, now called Mesopotamia, between the Tigris and Euphrates rivers in Asia Minor.[2] Although individual domiciles there had their cesspools and drains exactly the same as those of the modern Arab, no attempt at municipal disposal of sewage seems to have been made until the time of the Chaldean-Babylonian and Assyrian empires, which suc-

[1] See Tobey, Romance of sanitary science, *Modern Medicine*, September, 1919.

[2] Recent excavations, however, seem to indicate an even older civilization in the valley of the Nile. Some authorities put it at 12,000 years ago.

ceeded the Sumerian. Babylon and Nineveh, the capital cities of these two great peoples, were completely sewered and also supplied with public water supplies brought from long distances through channels. The city of London, it might be remarked, did not install a system of sewers until the eighteenth century after Christ.

Another of the great civilizations of ancient times was that of Egypt, which flourished in the valley of the Nile three thousand years or more before Christ. From the writings of Herodotus we know that public hygiene was practised by those people, and there is no doubt that it profoundly affected the thought of the later civilizations of the Phœnicians and Hebrews, which existed side by side between the Mediterranean Sea and the Arabian Desert. The ancient Hebrews were, in fact, the real founders of public health and the laws of Moses, who was born about 1600 B. C., contain sanitary precepts which are as sound to-day as when they were promulgated. The Hebrews quarantined the leper and practised sanitation as a community art. Jerusalem was well sewered and had a good water supply.

The sea kings of Crete, who built the wonderful palace of Broad Knossus more than two millennia before Christ, constructed with it an elaborate system of baths and drains, latrines, and sewers. Cyrus the Great, Emperor of the Persians in the sixth century B. C., believed in military hygiene and in public health. When he reported to his father that he had provided his army with competent physicians, he was admonished, "But these physicians, my son, of whom thou speakest, are like menders of torn garments, and thus, they cure those who have fallen sick. Thy chief anxiety should be to provide for health, for thou oughtest to take care to prevent thy army from falling into sickness at all." These ancient words of wisdom epitomize the great principle of prevention which is to-day so generally acknowledged to be more valuable than cure. Modern ideas have gone a step further, however, and, as will be pointed out, have added the promotion of positive health to the prevention of disease.

The golden age of Greece, the fifth century before Christ, saw notable achievements in the art of public health. The Greeks revered the human body and in order to assist it in the attainment of physical perfection, instituted a remarkable system of personal

hygiene, which has never since been approached in the history of the world.[3] It is startling to conceive how modern were these ideals and how much in consonance with present-day conceptions of positive health promotion. Even the Grecian temples to the sun may have been less pagan than we are sometimes prone to believe, for we know to-day that sunlight has definite therapeutic qualities and is actually curative of rickets and certain forms of tuberculosis.

The Greeks fostered not only personal hygiene and physical training, but were likewise interested in public health as practised by government. In the classic report of the Massachusetts Sanitary Commission of 1850, it is stated that Plato and Aristotle thought that no community could exist without health officers.[4] Such noted figures as Epaminondas, Demosthenes, and Plutarch served in that capacity, and Plutarch's rules of health are published and read even to-day. Hippocrates, the " father of medicine," was a sanitarian as well as a physician, and wrote three books on hygiene and sanitation. Greek engineers were probably responsible for the early sanitary engineering of Carthage and Rome, though to the Romans belongs the credit for the most marvellous development of the art of public sanitation. If any one doubts the significance of public health in government, it might be observed that an epidemic disease was undoubtedly a contributor to the passing of Greece and to its downfall. That disease was malaria.

Two thousand six hundred and sixty years ago the Romans built the famous Cloaca Maxima, used to-day, as it has been for centuries. Like the sewers, some of the ancient Roman aqueducts are also still in use. The first constructed in 312 B. C. by Claudius Appius, after Rome had decided no longer to tolerate drinking the polluted water of the Tiber, was eleven Roman miles (each 4854 feet) long, mostly underground. During the next six hundred years, twenty aqueducts of varying lengths and sizes were built. One of them, the Marcia, was sixty-one miles in length. The best known are, perhaps, the Claudio and the Anio Novus,

[3] K. Sudhoff, quoted by C-E. A. Winslow in his Evolution and significance of the modern public health campaign (1923). This book of Winslow's is the best concise history of the development of public health. See also Welch, W. H., Public health in theory and practice (1925).

[4] Report of the Massachusetts Sanitary Commission, 1850.

completed in 50 and 52 A. D., respectively. The former was forty-six miles long, the latter fifty-eight, and between them they doubled the water supply of the city. The Romans likewise constructed aqueducts in their colonies, and of these, that at Segovia, Spain, is the most perfect remaining and still in operation.

Not only was sanitary engineering for the benefit of the public developed in Rome, but sanitary regulations were also promulgated. In his History of Rome, Mommsen narrates[5] that the duties of the ædiles, whose office was created in 494 B. C., included the sanitary supervision of city districts, such as maintenance of the drains, cleaning and paving of streets, prevention of nuisances, regulation of food supplies, and special oversight of baths, taverns, and brothels. The Romans had excellent building regulations and rigid laws prohibiting stream pollution.

The glory that was Greece and the grandeur that was Rome gave way to a period aptly known as the Dark Ages. In medieval Europe, sanitation and hygiene were neglected and forgotten, but even in this unclean and pestilence-laden era, some measures for public health had to be invoked by the State. Epidemic diseases were rampant and called for vigorous action for their suppression. Leprosy was particularly prevalent, accelerated in its spread by the Crusades of the sixth century. As early as 583 the Council of Lyons attempted to restrict the free migration of lepers, and other rulers and ruling bodies also endeavored by legal enactment to stem the tide of this scourge. The leprosy decretals of the Lateran Council in 1179, when the epidemics were at their height, were responsible for vigorous campaigns against the malady. Throughout medieval times in Europe "the State was continually taking measures, superstitious and futile though they were, to protect the people from disease."[6]

The Church, concerned primarily with men's souls, early discovered that death and disease were not conducive to its influence for spiritual advancement, and its enlightened princes interfered zealously in the task of saving lives. As early as 590 A. D., Gregory the Great ordained religious processions as a method to reduce mortality, a method which unfortunately was not success-

[5] Mommsen, History of Rome, Vol. III, p. 84.
[6] Brend, W. A., Health and the state (1917).

ful. As leprosy began to decline in the fourteenth century, bubonic plague became unduly prevalent. In 1374 Venice imposed the first quarantine, a maritime one against infected ships and travelers. Other cities, as Ragusa and Marseilles, adopted similar measures shortly afterwards. In 1348, during the terrible plague epidemic, Venice had, for the first time in history,[7] appointed a board of health. The rules for forty days' isolation, made by these guardians of the public health, gave rise to the term "quarantine."

In France in 1350, King John II established the first system of sanitary police, a step which one writer[8] has characterized as the beginning of the sanitary reform. The real inception of modern public health did not come until the middle of the nineteenth century, however, and its foundation was laid almost simultaneously in England and America. Going back to the thirteenth and fourteenth centuries, that period saw the promulgation of a number of sanitary laws in London. They were usually directed against filth and uncleanliness, which were thought to have a tremendous effect on salubrity, as well as comfort. In 1357, for instance, Edward III issued a royal order to the Mayor and Sheriffs prohibiting the throwing of filth into the Thames and the Flete. Prussia established a central medical bureau in 1685 and appointed health officers to advise government officials on public health matters.[9]

The Foundation of Modern Public Health. In medieval times, the concern of the State for the public health was, as Professor C-E. A. Winslow has pointed out,[10] largely with the object of remedying foul conditions, and not so much with prevention and prophylaxis. Not until after the scientific renaissance of the eighteenth century did the sanitary awakening occur. This had been the period of the *laissez-faire* policy in government, a movement epitomized in the idea attributed to President Jefferson, that the government governs best which governs least. Some

[7] Kober, G. M., Progress in health conservation during the past fifty years. Public Health Service, Public Health Reports, April 6, 1923.

[8] Lemuel Shattuck, in Report of the Massachusetts Sanitary Commission, 1850.

[9] Kober.

[10] Winslow, p. 6.

improvements in social and industrial conditions in England had been effected, nevertheless, in the eighteenth century. A notable poor law had been put into effect, as had also a number of reforms in the growing factory system. The Secretary of the Poor Law Commissioners had in 1838, the year after Queen Victoria ascended the throne, instituted studies on the sanitary conditions which contribute to ill-health. This commissioner was Edwin Chadwick, and to him, as much as to any other one man, does public health, as developed to-day, owe its impetus. He was not a medical man, but a lawyer and sociologist. In 1842 the Poor Law Commissioners issued a comprehensive report on sickness and sanitation. This report created much comment, and in 1848 Great Britain established a General Board of Health, of which Chadwick became a member. Thus, the first public health reform in England can be said to be really the direct consequence of the poor laws, for it was the desire to reduce the enormous expense of caring for sickness which led to this public health act.[11]

This first British health board was in existence only six years. In 1855 a new board replaced the old. It was parliamentary in character, its president being a member of the Government, and there was also a newly created office of Central Medical Officer. This position was filled by the appointment of Dr. (afterwards Sir) John Simon, who had been the first Medical Officer of Health of London, having occupied that place since 1848. The year before, Liverpool had appointed the first medical health officer in all England. John Simon held office with the General Board of Health until 1876 and during that time gave vast momentum to the public health movement. He was responsible for the passage of many new health laws, including the notable Sanitary Act of 1866. To him and to Chadwick is due the credit for the great sanitary awakening which was soon to become evident in our own country.

Public Health in the United States. While Old England was learning to cope with the ever-present problem of disease, New England, across the Atlantic, was also beginning to make progress in the conservation of health. Due to the inspiration of Chadwick

[11] Newsholme, A., Public health and insurance (1920). Chapter on the Historical development of public health policy in England.

and Simon, Massachusetts had appointed a Sanitary Commission, which issued a remarkable report in 1850. This document recommends many public health duties which should be undertaken by the state. It was written by Lemuel Shattuck, who like Chadwick in England, was not a physician; he was a statistician. Of the report, Professor C-E. A. Winslow says, "This report, drafted . . . nearly three-quarters of a century ago, is worthy to rank with the best productions of English sanitary statesmanship—I am not quite certain that for breadth and clarity of prophetic vision it is not the most remarkable document in the history of public health."

In the report, Shattuck makes several significant statements bearing on the relation of government to health. He says,[12] "The condition of perfect public health requires such laws and regulations as will secure to man associated in society the same sanitary enjoyments that he would have as an isolated individual; and as will protect him from injury from any influences connected with his locality, his dwelling house, his occupation, or those of his associates or neighbors; or from any other social causes. It is under the control of public authority and public administration; and life and health may be saved or lost, and they are actually saved or lost as this authority is wisely or unwisely exercised."

And later on, he avers, "But whom does this great matter of public health concern? . . . The people are principally concerned, and on them must depend, in part at least, the introduction and progress of sanitary measures."

Nearly twenty years were to elapse before Shattuck's wise recommendations were to receive proper recognition; but in 1869 Massachusetts established the first real State Board of Health. In 1855, due to a severe epidemic of yellow fever, Louisiana had created a health body with state-wide powers, but it was more in the nature of a temporary quarantining authority than a state health board.[13] It was reorganized in 1898 to assume broader functions. The Massachusetts idea was soon followed by the other states and boards of health were established in many of them in

[12] This report is reproduced in G. C. Whipple's State sanitation, Vol. I (1917).

[13] Kerr, J. W., and Moll, A. A., Organization, powers and duties of health authorities (1912). Public Health Service, Public Health Bulletin No. 54.

succeeding years.[14] To-day every state in this country has a state health organization. Provision for some of these was made by the state legislature at the same time that local health service was authorized. On the whole, however, local health administration in this country has antedated state activity.

In the early days of the colonies and on through the seventeenth and eighteenth centuries, public health was occupied mainly with attempts to control smallpox, the chief pestilence of those days, though some measures against yellow fever were also taken. The first sanitary legislation in this country was an enactment of March, 1647 or 1648,[15] by the General Court of Massachusetts, providing for a maritime quarantine, due to an epidemic of yellow fever in the West Indies. In 1666 the Selectmen of Boston made rules and regulations for scavengers. In 1669 Massachusetts passed another quarantine act, which, on account of its stringency, was not allowed by the Privy Council. Boston, Salem, and Plymouth adopted local regulations in 1678 to combat threatened

[14] Kerr and Moll give the chronological establishment of state health organization as follows:

Porto Rico	1768	Arkansas, Indiana, New Hampshire, West Virginia	1881
District of Columbia	1822	Missouri	1883
Hawaii	1851	Kansas, Maine, Pennsylvania	1885
Louisiana	1855	Ohio, Vermont	1886
Massachusetts	1869	Florida, North Dakota	1889
California	1870	Oklahoma	1890
Minnesota, Virginia	1872	Nebraska, Washington	1891
Michigan	1873	Colorado, Nevada	1893
Maryland	1874	South Dakota	1895
Alabama	1875	Utah	1898
Wisconsin	1876	Montana, Wyoming	1901
Illinois, Mississippi, New Jersey, Carolina, Tennessee	1877	Arizona, Georgia, Oregon, New Mexico	1903
Connecticut, Kentucky, Rhode Island, South Carolina	1878	Idaho	1907
Delaware	1879	Texas	1909
Iowa, New York	1880		

[15] There are a number of sources of historical information on early health legislation. These include: Chapin, C. V., History of state and municipal control of disease, in the book, A half century of public health (1921); Whipple, State sanitation (1917); Tandy, Local quarantine and inoculation for smallpox in the American colonies, *American Journal of Public Health*, Vol. XIII, p. 203 (1923); Tandy, Regulation of nuisances in the American colonies, *American Journal of Public Health*, Vol. XIII, p. 810; and Winslow, Health legislation in Colonial Connecticut, *Bull. Soc. Med. Hist. of Chicago*, December, 1924.

outbreaks of smallpox, and in 1742 the colony itself passed a law to prevent smallpox and other infectious sickness. Connecticut passed temporary quarantine measures in 1663 and 1679, and a more comprehensive act in 1702. The Province of Massachusetts Bay had attempted to regulate nuisances in 1692, had provided for commissioners of sewers in 1702, and had passed an act regulating drains, all of which were privately owned, in 1709.

South Carolina was early in the field of nuisance regulation, having passed an act dealing with swine and noisome weeds even prior to the Massachusetts enactment of 1692. This act and a later one in 1698 were aimed more at comfort than health, however; and the latter element did not appear until 1704, when slaughter houses were regulated in what was presumed to be the interests of the public health. In the Province of Pennsylvania, a law of 1712 dealt with nuisances in Philadelphia. Yellow fever afflicted Philadelphia in 1793, and as a consequence a local board of health was established in that city the following year. New York followed suit in 1796, though it never had a really effective organization until 1866, when the famous Metropolitan Health Law was passed, after a sanitary survey which formed a part of the fight on the corrupt Tweed ring.[16]

Honors for the first comprehensive state law authorizing the establishment of local health organization go again to Massachusetts, for this commonwealth passed such an act on June 22, 1797. In accordance with its terms, Boston set up a board of health in 1799, with Paul Revere at its head. This law also served as an example for other states, though the growth of local health administration was rather slow. Chicago, for instance, did not have a board of health until 1867. In 1873 there were only thirty-seven local health organizations in this country. To-day practically all of the states have laws dealing with local health powers and duties, though the efficiency of the administration of them varies considerably among different states and within the states themselves.

Pasteur and the Science of Bacteriology. At about the time of which we have been writing, that is, the latter half of the nineteenth century, a more or less obscure French chemist was quietly

[16] Stephen Smith, The city that was (1911).

working in his laboratories in Paris. He was Louis Pasteur, whose name is known and revered to-day throughout the civilized world. For Pasteur, by means of his brilliant researches, became the founder of modern preventive medicine, which is so large a contributor to the present science of public health. He was born in 1822, began his noteworthy investigations in 1858, pursued them diligently for twenty years, and when he died in 1895 had seen his theories, derided and belittled at first, accepted by the world of science. Pasteur, through his researches on fermentation, established and proved the germ theory of disease, a theory which has been further proven without possibility of controversion many times since. In 1877 he and Robert Koch, another whose name also belongs to the roster of the founders of modern public health, each working independently, discovered the bacillus which causes anthrax. In 1882 Koch discovered the germ of tuberculosis, while the micro-organisms which produce cholera were found by him in 1883 and those of diphtheria and typhoid fever in 1884 by Koch and Gaffky, respectively.[17]

The latter part of the nineteenth and early portion of the twentieth centuries saw many wonderful achievements in the science of public health. Bacteriology became well developed, and the application of new ideas to disease prevention naturally revolutionized administrative practice. Since our concern is mainly with health in its relation to government, these discoveries and accomplishments must be passed over, but their study and the story of their evolution is a fascinating one.[18] The work of the Massachusetts State Board of Health, which forms a landmark in the history of sanitary science, should be mentioned, however. Under the guidance of Professor William T. Sedgwick of the Massachusetts Institute of Technology as consulting biologist, and other leaders, it carried on pioneer investigations on sewage disposal. Professor Sedgwick was also the leading epidemiologist of his time and as a teacher exerted an immense influence on the future of public health in this country.

[17] A history of bacteriology and its contribution to public health is given in A Half century of public health (1921), published by the American Public Health Association.

[18] The reader interested in following up this topic should consult W. T. Sedgwick's great classic, Principles of sanitary science and the public health (1902), the book by Winslow, and other references already cited.

The Health Department of New York City, under the direction of Dr. Hermann M. Biggs, who later, from 1914 to the time of his death in 1923, served as State Health Commissioner, was also a center from which radiated the beneficial teachings and applied science of bacteriology and public health administration. Another notable health organization has been that at Providence, Rhode Island, where Dr. Charles V. Chapin has been Superintendent of Health since 1884. In 1910 Dr. Chapin published his classic book entitled "Sources and modes of infection," which, radical as it was then considered, performed much useful service in molding administrative opinions.

The Three Periods of Public Health. Public health in its evolution has gone through three distinct periods. As Dr. Chapin has pointed out,[10] the first of these, beginning in 1848, when the English Public Health Act was passed, and continuing for thirty or forty years, was dominated by the theory of filth as the cause of all sickness. The central idea was that putrefaction and noxious odors emanating therefrom gave rise to maladies. Thus, the term "malaria" is due to this idea of "bad air," though to-day it is well known that malaria is spread by the bite of infected mosquitoes of the genus *anopheles*. The removal of the so-called nuisances was the chief aim of health administrators in those days. Municipal cleanliness is, of course, an admirable thing, but it alone cannot stay the progress of bacilli-disseminated maladies. The experience in Havana in 1898 proved this fact; for yellow fever abated in no whit after Colonel Waring had made Havana the world's cleanest city. When, however, Colonel Gorgas rid Havana of mosquitoes, particularly the *stegomyia,* as it was then called (now the *Aedes Calopus*), yellow fever vanished. Disease does not breed in filth, though it may be carried by it, a fact which eventually came to be recognized.

The second period in the evolution of public health began about the time a new Public Health Act was passed in England in 1879. This was a period of the quarantine and isolation of disease. It was the time when bacteriology was in its infancy and ideas of contagion were beginning to spread. Sanitarians then thought

[10] Evolution of preventive medicine, *Journal of the American Medical Association,* January 22, 1921.

that if every case of a disease were isolated the disease would be stamped out, and so, what has been called the " shot-gun " method of quarantine was invoked. Modern science considers quarantine of value, to be sure, but it recognizes that this is only one of many factors in coping with disease. During this second period, which lasted for a quarter of a century or so, the state used much compulsion in the control of the public health. It took away men's liberty and men's property, sometimes, as we know, with little scientific justification.

The first period was one of alleviation of disease, the second, one of suppression, the third period, dating from the early part of this century is one of prevention. More than that, it is one of health promotion as well as disease control. It is an educational rather than a police period, though law and its enforcement still is and must be for some time to come one of the fundamentals of public health administration.[20] But, as the Earl of Derby remarked, " Sanitary instruction is more important than sanitary legislation." This fact has been realized and applied with marked success in the comparatively recent campaigns against tuberculosis and infant mortality. It has been particularly exemplified by the growth of the movement for public health nursing. In other words, modern public health is not merely the negative matter of fighting disease, important as is that duty, but it is the positive concept of promoting personal health and thereby contributing to the advancement of the public health.

The Modern Science of Public Health. Modern public health has been defined[21] as, " the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health."

[20] See Tobey, Public health law, a manual of law for sanitarians (1925).
[21] Winslow, The untilled fields of public health (1920); *Science* (n. s.), Vol. LI; *Modern Medicine,* Vol. II.

Public health, as conceived in these terms, is a science in itself, and not a branch of any other science. It draws upon preventive medicine, sanitary engineering, chemistry, sociology, economics, law, education, and psychology for its constituent parts. Those persons, medical and non-medical, who practice this science of public health to-day, are members of a distinct profession. For want of a better name, they are called "sanitarians."

Modern public health activities should not be confused with state medicine, as that term is used to-day. Back in 1850, "state medicine" was a term often applied to the dawning science of public health. State medicine, as the words are understood to-day, however, connotes the furnishing of medical relief under the direct auspices of the state. Public health is not relief, but prevention of disease and promotion of hygiene. It does not aim to cure, except in those instances where curative measures are essential to prevention. In England to-day, with its system of insurance and the panel physician, there is what approximates state medicine. In the United States, the socialization of curative medicine is being gradually achieved, but that is quite a different matter from the practice of medical measures by the State. The increasing socialization of medicine is desirable, a fact conceded by all of the leaders of the profession, but whether state medicine is a necessary measure or not need not be dealt with here, for the question is not involved in this study and discussion.

Results of Public Health Activities. In concluding this description of the historical development and present status of public health, it may not be out of place to mention a few of the results achieved. The average length of life in the United States is now about fifty-eight years. In 1920 it was fifty-six years, in 1910 from forty to forty-five, and in 1790 it is estimated that it was only about thirty-five years. In half a century, therefore, nearly fifteen years have been added to the span of life in the United States, but even with all of the achievements of sanitary science, the life span falls short of the Biblical three score and ten. Much of the real progress has been made in the last decade and it seems likely that the future will see even more brilliant accomplishments in the conservation of national vitality. In fact, the American Public Health Association definitely went on record in 1922 as believing that within the next fifty years as much as twenty years

may be added to the expectancy of life which now prevails throughout the United States.

Although the best indication of sanitary progress is shown by figures for life expectancy, mortality statistics are also valuable as gauges of accomplishment. In the United States death rates for the country as a whole refer to the Registration Area, which represents only a little over 80 per cent of the total population. Data from states not in this area are not as yet considered sufficiently reliable for use. In 1880 the general death rate of the United States was 19.8 per 1000 population. At the beginning of the twentieth century it was 17.6; in 1910 it had dropped to 15.0; and in 1920 it was 13.1. There has been a still further decline in subsequent years, and 1924 was apparently the banner year of them all. At present considerably over a million persons die each year in this country from various causes.

As the general death rate has declined, so too has that of certain specific diseases gone down. Perhaps the most striking example of the accomplishments of the sanitarian is shown in the reduction in the typhoid fever mortality. In 1900 the United States, with a death rate from this cause of 46.5 per 100,000 population, occupied a rather unenviable position among the leading nations of the world. To-day, due to improvement in public water supplies, sewage disposal, milk production, and other measures, the typhoid fever mortality is less than 7. Tuberculosis is another scourge which has shown a remarkable diminution. In a quarter of a century the death rate from the so-called great white plague has fallen from nearly 200 per 100,000 in 1900 to less than 90 to-day. Many factors, economic and biologic as well as sanitary, have undoubtedly contributed to this decrease but the efforts of the public health worker have certainly played a conspicuous part. Many other instances of the conquest of man over the microbe could be given. The infant mortality rate, for example, has fallen from 170 deaths under one year of age per 1000 live births in 1900 to about 83 in 1922.

In spite of the generally favorable record in the conservation of national vitality in this country, much remains to be done. Progress against the respiratory diseases has been slight, while the trend of the mortality from the organic or degenerative diseases, such as cancer, apoplexy, Bright's disease, heart trouble, and

diabetes, is either stationary or slightly upward. Maternal mortality is also too high, and has shown no decline. At least six countries have a life span superior to that of the United States. During the first decade of the twentieth century, New Zealand, Australia, Denmark, Norway, Sweden, and Holland could each show an expectancy of life greater than ours, while that of Switzerland was about the same, and England was close behind. In India, it might be remarked, the life span, unchanged for centuries, is only between twenty-two and twenty-three years. In New Zealand it is about sixty.

In order the better to conserve our national vitality, a number of steps are necessary. Without being inclusive, some of these are: The development of more efficient state and local public health administration; the recruitment and training of more and better sanitarians, or professional public health workers; the more complete education of the general lay public in the principles of hygiene and sanitation, especially through the agency of the school; the increasing participation of the medical profession in the practice of preventive medicine; the extension of scientific research along public health lines; and, finally, the development of an effective central leadership, which shall make possible these advances, as well as others. There is no reason why such leadership and guidance should not be exercised by the National Government, through a centralized health agency. This could be done without in any way disturbing or destroying the autonomy of the states in connection with public health matters. This idea will be more completely developed in the course of this book.

"Public health," wrote Benjamin Disraeli, "is the foundation upon which rests the happiness of the people and the power of the state. The first duty of a statesman is the care of the public health." And Theodore Roosevelt, in a message to Congress in 1908, said, "It is highly advisable that there should be intelligent action on the part of the nation on the question of preserving the health of the country." There are many other similar declarations by great statesmen, by eminent scientists, and by thinking people in all walks of life. The care of the public health is and must be an essential feature of government. That government is worthless which is not supported and maintained by a virile and physically powerful nation.

CHAPTER III

PUBLIC HEALTH IN THE MESSAGES OF THE PRESIDENTS

The care of the public health has been said to be the first duty of the statesman. The protection and promotion of the public health is certainly one of the essential features of sovereignty and those who are chosen to administer government must take cognizance of the physical welfare of the people. In the United States, public health, as part of the police power, is entrusted primarily to the individual states. The conservation of national vitality, however, is a matter of broader interest, and the Federal Government does have certain proper public health duties. These include the power of preventing the introduction of disease from without; the prevention of the interstate spread of disease; regulation of the health of wards of the government and citizens of the territories, the District of Columbia, and other Federal areas; and such public health matters as are incidental to treaties, taxation and one or two other matters.

Comments and recommendations regarding national vitality ought, therefore, to be found in some abundance in the messages and papers of the Presidents. Of the thirty chief executives of this nation, however, only about one-third of them seem ever to have emphasized this phase of government. So far as disclosed by an examination of the nineteen volumes of the compilation of the messages and papers of the Presidents, prepared under the direction of the Joint Committee on Printing of the House and Senate, attention to the public health on the part of these statesmen has been rather scanty.

In connection with this study of the National Government and public health this review of the items referring to public health which are to be found in these messages is here presented. No attempt has been made to assemble all routine matters, such as the transmission of bureau or special reports to Congress.

John Adams and National Quarantine. In the early days of the republic, severe epidemics of yellow fever were regular occurrences. John Adams, the second President, began his second annual message to Congress, on December 8, 1798, by referring to this pestilence, and then took occasion to urge federal laws in aid of the health of the states. Since it was nearly one hundred years before another President made such a direct recommendation the words of Adams are worth quoting in full, as follows:[1]

But when we reflect that this fatal disorder has within a few years made repeated ravages in some of our principal seaports, and with increased malignancy, and when we consider the magnitude of the evils arising from the interruption of public and private business, whereby the national interests are deeply affected, I think it my duty to invite the Legislature of the Union to examine the expediency of establishing suitable regulations in aid of the health laws of the respective states; for these being formed on the idea that contagious sickness may be communicated through the channels of commerce, there seems to be a necessity that Congress, who alone can regulate trade, should frame a system which, while it may tend to preserve the general health, may be compatible with the interests of commerce and the safety of the revenue.

Shortly afterwards, in February, 1799, Congress repealed a law of 1796 (1 Stat. L., 474), which had authorized the President to direct revenue officers and commanders of forts to aid the states in the execution of quarantine, and enacted a new measure (1 Stat. L., 619) which did little more, however, than recognize state rights over quarantine and again authorize Federal coöperation.

Other Early Quarantine and Relief Matters. Thomas Jefferson seems to have dodged the quarantine issue. On February 24, 1802, he sent to Congress without comment a report of the Secretary of the Treasury, calling attention to the need for action in establishing marine hospitals, though these were concerned with medical relief under the act of July 16, 1798 (1 Stat. L., 605), rather than with quarantine. In his fifth annual message, December 3, 1805, Jefferson mentioned the recent affliction of two cities with fatal fever, and said, "Although the health laws of the states should be found to need no present revisal by Congress, yet commerce claims that their attention be ever awake to them."

[1] See Garner, J. W., Federal activity in the interest of the public health, *Yale Review*, August, 1905.

James Monroe directed the attention of Congress on February 17, 1825, to the need for legislation protecting the health of the people of the District of Columbia, saying, "This being the seat of the Government, its protection against such diseases must form one of its principal objects," but Congress took no action. Martin Van Buren, John Tyler, and Franklin Pierce, between the years 1837 and 1853, sent messages to Congress regarding plans and sites for marine hospitals. Pierce must have recognized sanitary achievements, for in his first annual message in 1853, in discussing population, he wrote, ". . . the increased average duration of human life known to have already resulted from the scientific and hygienic improvements of the past fifty years will tend to keep up through the next fifty." That he was right is shown by an increase in the average length of life from about forty years in Massachusetts in 1855 (the only State for which data are available) to about forty-seven years in 1901.

Cholera had become an international scourge, and on February 10, 1866, Andrew Johnson sent to Congress papers relative to a proposed international conference on the subject to be held in Constantinople. On January 12, 1875, Ulysses S. Grant, transmitted to Congress a report on epidemic cholera, as authorized by that body on March 25, 1874 (18 Stat. L., 286). Yellow fever outbreaks occurred again in 1873 and in 1876, the epidemics being particularly severe, culminating in 1878 in the worst of them all so far in the history of the country. More than 130 cities and towns were afflicted, about fifteen thousand persons succumbed to the malady, and the pecuniary loss was estimated at $100,000,000 by Surgeon General Wyman of the Marine Hospital Service. This Service had been created in 1870, but its duties consisted mainly of giving medical relief to certain beneficiaries of the government.[2]

President Hayes and Quarantine. Rutherford B. Hayes in his second annual message, on December 2, 1878, took cognizance of this epidemic, described it, and recommended Federal quarantine, in these words:

The fearful spread of this pestilence has awakened a very general public sentiment in favor of national sanitary administration,

[2] See page 81 of this book.

which shall not only control quarantine, but have the sanitary supervision of internal commerce in times of epidemics, and hold an advisory relation to the state and municipal authorities, with power to deal with whatever endangers the public health, and which the municipal and state authorities are unable to regulate. In view of the necessity for the most effective measures, by quarantine and otherwise, for the protection of our seaports and the country generally from this and other epidemics, it is recommended that Congress give to the whole subject early and careful consideration.

The National Board of Health. On April 29, 1878, Congress had passed a quarantine law (20 Stat. L., 27), but it still recognized state authority and was of little real effect. Its enactment was followed by the epidemic mentioned, and so Congress proceeded to establish a National Board of Health, by acts of March 3, 1879 (20 Stat. L., 484), and June 2, 1879 (21 Stat. L., 5), but gave the Board a term of only four years. The epidemic having subsided by that time, the Board was not continued, and the act creating it was repealed in 1893, when the first real quarantine law of national scope was passed.

Chester A. Arthur in his first annual message, December 6, 1881, called particular attention to the work of the National Board of Health, praising it in these words:

> The execution of the rules and regulations prepared by the Board and approved by my predecessor has done much to arrest the progress of epidemic disease, and has thus rendered substantial service to the nation.

He also made these significant remarks:

> The health of the people is of supreme importance. All measures looking to their protection against the spread of contagious diseases and to the increase of our sanitary knowledge for such purposes deserve attention of Congress.

On October 12, 1881, President Arthur had sent to Congress, a report of an international sanitary conference called by the National Board of Health in Washington in January of that year, a conference which had also been announced to Congress by President Hayes. On July 19, 1884, Arthur issued a proclamation directing those intrusted with the execution of quarantine to be particularly diligent in their measures against an epidemic then

prevalent in Europe. In his fourth annual message, December 1, 1884, he had mentioned this pestilence and told of the preventive measures taken by the Secretary of the Treasury, and since they were not entirely with authority of law, he requested Congress to uphold these actions.

Cleveland and National Health. Grover Cleveland apparently took much interest in national health. In his first term he contented himself mainly with transmitting reports of bureaus and in sending a delegate, Major George M. Sternberg, afterwards Surgeon General of the Army, to a sanitary conference in Rome in 1885, and a representative to Spain and other countries in Europe to study the prevalence of cholera. The report of this representative, Dr. E. O. Shakespeare, was later (1890) sent to Congress by President Benjamin Harrison.

In his second term, Cleveland came out wholeheartedly in his first annual message, December 4, 1893, for a system of national quarantine. He admonished Congress that "A more general and harmonious system than now exists, acting promptly and directly everywhere and constantly operating by preventive means to shield our country from the invasion of disease, and at the same time having due regards to the rights and duties of local agencies, would, I believe, add greatly to the safety of our people." Congress, however, had already passed a comprehensive quarantine act (27 Stat. L., 449), which is still in force, though amended in 1901 (31 Stat. L., 1086). This law provided for the taking over by the National Government of all quarantine stations which should be transferred by the states, and to-day all of them have been thus turned over.

In his second annual message, December 3, 1894, Cleveland advocated the creation of a national board of health. This part of his message is so significant, even though it was not acted upon by Congress, that it is quoted in full:

> I am entirely convinced that we ought not to be longer without a national board of health or national health officer charged with no other duties than such as pertain to the protection of our country from the invasion of pestilence and disease. This would involve the establishment by such board or officer of proper quarantine precautions, or the necessary aid and counsel to local authorities on the subject; prompt advice and assistance to local

boards of health or health officers in the suppression of contagious disease, and in cases where there are no such local boards or officers the immediate direction by the national board or officer of measures of suppression; constant and authentic information concerning the health of foreign countries and all parts of our own country as related to contagious diseases and consideration of regulations to be enforced in foreign ports to prevent the introduction of contagion into our cities and the measures which should be adopted to secure their enforcement.

There seems to be at this time a decided inclination to discuss measures of protection against contagious diseases in international conference, with a view of adopting means of mutual assistance. The creation of such a National health establishment would greatly aid our standing in such conferences and improve our opportunities to avail ourselves of their benefits.

I earnestly recommend the inauguration of a national board of health or similar national instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people.

Theodore Roosevelt. Like Cleveland, Theodore Roosevelt was deeply interested in social problems. His messages contain more references to the public health than do those of any of predecessors. The first of importance occurs in his fourth annual message, December 6, 1904, in which he recommended a better national quarantine law. This paragraph is as follows:

It is desirable to enact a proper national quarantine law. It is most undesirable that a State on its own initiative enforce quarantine regulations which are in effect a restriction upon interstate and international commerce. The question should properly be assumed by the government alone. The Surgeon General of the National Public Health and Marine Hospital Service[2] has repeatedly and convincingly set forth the need for such legislation.

Legislation looking toward purity of foods was recommended by Roosevelt in his next annual message, December 5, 1905, and Congress accordingly passed the well-known Pure Food and Drugs Act of 1906 (34 Stat. L., 768). In his seventh annual message, two years later, December 3, 1907, the President mentioned how much good this law had accomplished. In this same

[2] The name of the Marine Hospital Service had been changed to Public Health and Marine Hospital Service in 1902 (32 Stat. L., 712).

message he devoted a paragraph to national vitality, in these words:

There is a constantly growing interest in this country in the question of public health. At last the public mind is awake to the fact that many diseases, notably tuberculosis, are National scourges. The work of the state and city boards of health should be supplemented by a constantly increasing interest on the part of the National Government. The Congress has already provided a bureau of public health and has provided for a hygienic laboratory. There are other valuable laws relating to the public health connected with the various departments. This whole branch of the government should be strengthened and aided in every way.

In this message he also urged an improved medical service for the Army, citing the losses from disease in the war with Spain.

Again, on December 8, 1908, in a special message, he strongly advocated legislation looking to the conservation of national vitality, in this language:

It is highly advisable that there should be intelligent action on the part of the Nation on the question of preserving the health of the country. Through the practical extermination in San Francisco of disease bearing rodents our country has this far escaped the bubonic plague. This is but one of the many achievements of American health officers; and it shows what can be accomplished with a better organization than at present exists. The dangers to public health from food adulteration and from many other sources, such as the menace to the physical, mental and moral development of children from child labor, should be met and overcome. There are numerous diseases, which are now known to be preventable, which are, nevertheless, not prevented. The recent International Congress on Tuberculosis has made us painfully aware of the inadequacy of American public health legislation. This nation cannot afford to lag behind in the world-wide battle now being waged by all civilized people with the microscopic foes of mankind, nor ought we longer to ignore the reproach that this Government takes more pains to protect the lives of hogs and of cattle that of human beings.

In another special message, February 9, 1909, he transmitted to Congress the report of the Commission on Country Life, and suggested that the Department of Agriculture enlarge its scope to include among other things a consideration of sanitation, for,

he said, "easily preventable diseases hold several million country people in the slavery of continuous ill health."

On December 17, 1906, he sent a special message on his trip to Panama, in which he described in detail the work of sanitation then under way, the results of which, he declared, had been "astounding." On February 15, 1909, he sent a special message regarding a national conference on the care of dependent children, which had recently been held in Washington.

Taft and the Movement for a National Bureau of Health. During the administration of William H. Taft, a determined movement for a national bureau of health was sponsored by the Committee of One Hundred of the American Association for the Advancement of Science. Mr. Taft supported this campaign and in his first annual message, December 7, 1909, recommended the creation of such a bureau. The text of this part of his message is as follows:

For a very considerable period a movement has been gathering strength, especially among members of the medical profession, in favor of a concentration of the instruments of the National Government which have to do with the promotion of public health. In the nature of things, the Medical Department of the Army and the Medical Department of the Navy must be kept separate. But there seems no reason why all the other bureaus and offices in the General Government which have to do with the public health or subjects akin thereto should not be united in a bureau to be called the "Bureau of Public Health." This would necessitate the transfer of the Marine Hospital Service to such a bureau. I am aware that there is a wide field in respect to the public health committed to the States in which the Federal Government cannot exercise jurisdiction, but we have seen in the Agriculture Department the expansion into widest usefulness of a department giving attention to agriculture when that subject is plainly one over which the States properly exercise direct jurisdiction. The opportunities offered for useful research and the spread of useful information in regard to the cultivation of the soil and the breeding of stock and the solution of many of the intricate problems in progressive agriculture have demonstrated the wisdom of establishing that department. Similar reasons, of equal force, can be given for the establishment of a bureau of health that shall not only exercise the police jurisdiction of the Federal Government respecting quarantine, but which shall also afford an opportunity for investigation and research by competent experts into questions of health affecting the whole country, or important sections

thereof, questions which, in the absence of Federal Government work, are not likely to be promptly solved.

Again in his second annual message, December 10, 1910, he repeated this recommendation and deplored the opposition which had arisen:

In my message of last year I recommended the creation of a Bureau of Health, in which should be embraced all those government agencies outside of the War and Navy Departments which are now directed toward the preservation of public health or exercise functions germane to that subject. I renew this recommendation. I greatly regret that the agitation in favor of this bureau has aroused a counter-agitation against its creation, on the ground that the establishment of such a bureau is to be in the interest of a particular school of medicine. It seems to me that this assumption is wholly unwarranted, and that those responsible for the government can be trusted to secure in the personnel of the bureau the appointment of representatives of all recognized schools of medicine, and in the management of the bureau entire freedom from narrow prejudice in this regard.

Congress did not see fit at this time to establish such a national health bureau, though in 1912 the name of the Marine Hospital Service was broadened to Public Health and Marine Hospital Service, and the scope of the bureau was somewhat enlarged (37 Stat. L., 309). It also created a Children's Bureau in that year (37 Stat. L., 79) and imposed a prohibitive tax on the manufacture of white phosphorus matches, in accordance with the wishes of the President, as expressed in his second message.

In a special message on economy and efficiency in the government service, Mr. Taft listed "the promotion of the public health" as one of the principal governmental objects in which the people of the United States are interested.

In the third part of his annual message of 1912, dated December 19th, he mentioned the health of the Indians and urged an appropriation for improving it. He also outlined the operation of the pure food law.

On January 16, 1913, he sent to Congress a special message giving the opinion of the American Consul General at Berlin on the Friedmann cure for tuberculosis.

On January 22, 1913, he sent a special message recommending an appropriation of $30,000 as a contribution to the Fourth International Congress on School Hygiene at Buffalo.

Woodrow Wilson. On April 3, 1917, when war with Germany was imminent, President Wilson issued an executive order making the officers and equipment of the Public Health Service available for military duty. In order to coördinate all activities of the Federal government dealing with public health, on July 1, 1918, he issued another executive order placing all such work under the Public Health Service. The text of this order follows:

WHEREAS, In order to avoid confusion in policies, duplication of effort, and to bring about more effective results, unity of control in the administration of the public health activities of the Federal government is obviously essential, and has been so recognized by Acts of Congress creating in the Treasury Department a Public Health Service, and specially authorizing such service "to study the diseases of man and the conditions influencing the propagation and spread thereof" and "to coöperate with and aid state and municipal boards of health";

Now, therefore, I, Woodrow Wilson, President of the United States, by virtue of the authority vested in me as Chief Executive, and by the Act "authorizing the President to coördinate or consolidate executive bureaus; agencies, and offices, and for other purposes, in the interest of economy and the more efficient concentration of the government" approved May 20, 1918, do hereby order that all sanitary or public health activities carried on by any executive bureau, agency, or office, especially created for or concerned in the prosecution of the existing war, shall be exercised under the supervision and control of the Secretary of the Treasury.

This order shall not be construed as affecting the jurisdiction exercised under authority of existing law by the Surgeon General of the Army, the Surgeon General of the Navy, and the Provost Marshal General in the performance of health functions which are military in character as distinguished from civil public health duties, or as prohibiting investigations by the Bureau of Labor Statistics of vocational diseases, shop sanitation, and hygiene.

In his eighth annual message, December 7, 1920, Wilson mentioned the necessity for making rural life more attractive and healthful.

Harding and the Department of Welfare. While Warren G. Harding was President he was much interested in the proposition for a new department of welfare. In a special message to Congress on April 12, 1921, he recommended that consideration be given to the creation of such a department, saying,

> Government's obligation affirmatively to encourage development of the highest and most efficient type of citizenship is modernly accepted, almost universally. Government rests upon the body of citizenship; it cannot maintain itself on a level that keeps it out of touch and understanding with the community it serves. Enlightened governments everywhere recognize this and are giving their recognition effect in policies and programs. Certainly no government is more desirous than our own to reflect the human attitude, the purpose of making better citizens—physically, intellectually, spiritually.
>
> To bring these various activities together in a single department, where the whole field could be surveyed, and where their interrelationships could be properly appraised, would make for increased effectiveness, economy, and intelligence of direction.

CHAPTER IV

THE GROWTH OF FEDERAL HEALTH ACTIVITIES AND CONGRESSIONAL ENACTMENTS

A Haphazard Development. The growth and evolution of the executive departments of the United States Government has been likened to the gradual construction over a course of years of a rambling dwelling house. To the original small structure there have been added from time to time, as the opportunity arose, wings and gables and other appurtenances, with no attempt at homogeneity or architectural efficiency. The result represents a scattered, uncoördinated, and more or less inharmonious whole, useful for many purposes and providing shelter, at least, but a building which needs to be completely reconstructed in accordance with modern ideas in order to produce real utility and effectiveness.

This simile is particularly apt when applied to the many branches of the government which are concerned with the public health. The forty administrative units which are interested directly or indirectly with some phase of national vitality have been created from time to time during the past 136 years, and to-day they are to be found in every cabinet department and several independent establishments. The eight bureaus which carry on public health work as their major activity are themselves in five different executive departments. The reason for this dispersion is a historical one. The various public health activities have been added to the Federal service according to the exigencies of the period. The story of their development is necessary to a complete understanding of the evolution of Federal public health functions. The evolution of each particular bureau or other unit is narrated more in detail in Part II, but a concise description of their development as a whole will not be out of place here. A chronological statement of the growth of Federal health legislation and public health and medical activities is presented at the end of the chapter.

The First Health Laws. Although Congress had passed a law in 1794 providing that when unusual conditions of disease existed at the seat of government, Congress might be convened elsewhere (1 Stat. L., 353), and another in 1796 providing for Federal coöperation with states in the enforcement of their quarantine laws, the first real health legislation was the act of July 16, 1798 (1 Stat. L., 605). This act authorized the Collectors of Customs to collect twenty cents a month for each American seaman arriving from foreign ports, in order to provide a fund for medical relief, an activity which was the precursor of the Marine Hospital Service, afterwards the Public Health Service, though this service was not definitely organized until 1870. In the following year, 1799, a new act (1 Stat. L., 729) was passed making the personnel of the Navy beneficiaries of this medical relief and authorizing the Secretary of the Navy to deduct twenty cents from the monthly pay of officers, seamen, and marines, and turn it over to the Secretary of the Treasury for the purpose. The latter act remained in force until 1811, when naval hospitals were placed directly under the jurisdiction of a Board of Commissioners of Navy Hospitals (2 Stat. L., 650), which was discharged in 1832 and its powers vested in the Secretary of the Navy (4 Stat. L., 572). The Bureau of Medicine and Surgery in the Navy was not created until 1842 (5 Stat. L., 579).

The Medical Department of the Army antedates the beginning of the Marine Hospital Service by two months or so, as the President was granted authority on May 28, 1798 (1 Stat. L., 559), to organize a provisional army and to appoint certain officers, including a Physician General. Another act (1 Stat. L., 721) in the following year, specifically to regulate the Army Medical Establishment of the United States, provided for appointment of a Physician General, an Apothecary General, and a Purveyor, together with a suitable number of deputies, surgeons, hospital mates, and stewards.

After a considerable interval another national medical agency, the government hospital for the insane, was established in 1852, when an appropriation was made for it (10 Stat. L., 92), though the hospital was not organized until 1855 (10 Stat. L., 682). The Freedmen's Hospital, founded in 1871, was placed under the control of the War Department in 1872 (16 Stat. L., 506), and trans-

ferred to the Interior Department two years later. In 1873 a Medical and Education Division was created in the Office of Indian Affairs, then, as now, in the Department of the Interior. The medical part of this division was in existence only four years and was not revived until 1909, when a Health Section was established in the Education Division. In 1922 this became the Medical Division. The first law pertaining to the health of Indians had been passed, however, as early as 1832, when Congress made provision for the vaccination of the Indian tribes (4 Stat. L., 514).

Investigations of animal diseases were authorized in 1878 (20 Stat. L., 240) and this work was gradually extended, until in 1884 a Bureau of Animal Industry was established (23 Stat. L., 31) under the Commissioner of Agriculture. This Bureau has developed extensively since that date until to-day it is one of the largest and most active in the government organization. Much of its work affects human health.

The National Board of Health.[1] The National Board of Health, which was in existence for a brief period during the latter part of the nineteenth century, represents an almost forgotten incident in the history of public health in the United States. The immediate cause of the creation of the National Board of Health was a disastrous epidemic of yellow fever. This epidemic, which apparently was introduced from Cuba, swept over the United States in 1878 and was the worst visitation of this pestilence for a century. Although the Southern states suffered most, the Northern states also were severely attacked, and no part of the country seemed immune. It is estimated that 100,000 persons were stricken and that 20,000 died. The total loss to the country through this epidemic has been estimated by some at $100,000,000 and by others at $200,000,000. It cost New Orleans alone about $10,000,000. A calamity is often necessary to focus popular attention on a vital matter and this one naturally aroused some interest in national health. The President, Rutherford B. Hayes, in his annual message recommended to Congress the careful study of the protection of the country from epidemics.

[1] A more extended treatment of this subject by the author will be found in the *Nation's Health* for January, 1926.

When Congress convened in December of 1878, a committee was immediately appointed to "inquire into the history and means of preventing and arresting of yellow fever and cholera." Twelve experts, eight from the South and four from the North, were employed, and the committee rendered its report in February. Its conclusion was that yellow fever was not indigenous in any port of the South, but was generally introduced from foreign countries by means of commerce. In fact, of eighty-eight epidemics of yellow fever from 1683 to 1878, seventy-seven had been definitely proven to have been of foreign origin. The committee recommended that a system of national quarantine be established. In its report occurred this significant statement, "Public health is second in importance to no question which addresses itself to the legislator."[2]

It was then incumbent upon Congress to act, and on April 29, 1878, a law (20 Stat. L., 37) was passed which empowered the Surgeon General of the Marine Hospital Service, with the aid of customs officers, to impose and enforce maritime quarantine in coöperation with state and municipal officers. This act also directed consular officers to report to the Surgeon General sanitary conditions of the ports where they were stationed. The Marine Hospital Service had been organized in the Treasury Department by an act of June 29, 1870 (16 Stat. L., 169), its chief duties having been to afford medical relief to seamen of the American merchant marine.[3] Such relief had, in fact, been given since 1798, in part in government hospitals, in part by contract with private hospitals and physicians, though the Marine Hospital Service had no definite status until the act of 1870. The National Board of Health was created about a year after this first quarantine law, by an act of March 3, 1879 (20 Stat. L., 484). On June 2 of the same year Congress passed a more comprehensive act to prevent the introduction of contagious or infectious diseases into the United States (21 Stat. L., 5), which also repealed portions of the act of April 29, 1878. This new law placed the enforcement of national quarantine, still in coöperation with the states and as an aid to them,

[2] Allen, W. H.; Rise of the National Board of Health, *Annals of the American Academy of Political and Social Sciences*, January, 1900.

[3] Schmeckebier; The Public Health Service. Institute for Government Research, Service Monograph No. 10.

upon the National Board of Health, which was authorized to promulgate necessary rules and regulations for the purpose. Bills of health to be issued by consular officers to vessels were also provided for, and the Board was directed to obtain and publish sanitary information from foreign and domestic sources. For these and other purposes half a million dollars was appropriated. The term of the act was definitely limited to four years, the intention apparently being to try it out for that period and also to cope only with the existing emergency.

The National Board of Health, as created by the act of 1879, consisted of eleven members, seven appointed by the President, with the advice and consent of the Senate, three medical officers detailed from the Army, Navy, and Marine Hospital Service, respectively, and one representative from the office of the Attorney General. The original members, who met and organized on April 2, 1879, were as follows:[4]

James L. Cabell, LL. D., President
John S. Billings, Surgeon, U. S. A., Vice-President
Thomas J. Turner, Medical Director, U. S. N., Secretary
Preston H. Bailhache, Marine Hospital Service
Samuel F. Phillips, Solicitor General, Department of Justice
Stephen Smith, M. D., New York
Tullio S. Verdi, M. D., District of Columbia
Samuel M. Bemis, M. D., Louisiana
Henry I. Bowditch, M. D., Massachusetts
Hosmer A. Johnson, M. D., Illinois
Robert W. Mitchell, M. D., Tennessee

There was also a clerk, W. P. Dunwoody. Professor Cabell continued as president throughout the existence of the Board, though the other officers and some of the members changed from time to time. In 1881, for instance, Dr. Charles J. Folger had become secretary-treasurer and Dr. Charles F. Folsom had succeeded Dr. Bowditch. In 1882 Major Charles Smart of the Army took the place of Dr. Billings, likewise becoming secretary, while Dr. Stephen Smith was elected vice-president. New members in 1883 were Dr. John M. Browne, Medical Director of the Navy, Thomas Simons, Assistant Attorney General, and Colonel George

[4] National Board of Health, Annual Report, 1879.

E. Waring, a noted sanitary engineer. The National Academy of Sciences was directed to assist the Board, and scientific aid was also obtained from the American Public Health Association, which had been founded in 1872 by Dr. Stephen Smith. Professor Cabell was president of this association when appointed to head the Board.

The duties of the Board had been stated by Section 2 of the original law to be "to obtain information upon all matters affecting the public health, to advise the several departments of the Government, the executives of the several states, and the Commissioners of the District of Columbia, on all questions submitted by them, or whenever in the opinion of the board such advice may tend to the preservation and improvement of the public health." About this time Pasteur was conducting his notable studies in France, and other scientists were working in England and on the continent on medical and sanitary research. The Board inaugurated, therefore, a number of investigations, which were undertaken by public spirited sanitarians in various parts of the country, who received no remuneration, except occasional grants for paying assistants or purchasing materials needed.

Among the investigations which were begun or completed may be mentioned the following:

1. An investigation of yellow fever in Cuba, by Dr. S. E. Chaille, Col. T. S. Hardie, C. E., Dr. John Guiteras, and Surgeon George M. Sternberg. It is interesting to note that the Board's report for 1879 discusses this study in these words, "The facts presented do not confirm the theory of the spontaneous origin of the yellow fever poison on board ships, and make it improbable that the cleaning of the harbor of Havana and the constant renewal of its waters, however desirable, would prevent infection of the shipping at the port." Nearly twenty years were to elapse before the United States Army commission demonstrated that yellow fever was transmitted by the bite of an infected mosquito, a fact, the practical application of which by Gorgas, resulted in the eventual freeing of Havana from the disease and made possible the construction of the Panama Canal.
2. An investigation of organic matter in the air by Professor Ira Remsen.
3. Investigations of the effects of disinfectants and the merits of patent disinfectants.
4. Investigations of the adulteration of foods and the diseases of food-producing animals.

5. Investigations of the flow in sewers and of various aspects of sewerage, by Colonel Waring.
6. Investigation of diphtheria, by Dr. Elisha Harris.
7. Investigation of the influence of various soils on drainage problems, by Prof. Raphael Pumpelly.
8. Researches by Dr. Sternberg on suspended particles in the air of places of infection. Swamps came in for considerable attention under the now discarded and erroneous theory of the miasmic causes of disease.
9. Relations between meteorology and vital statistics.
10. The etiology of malaria, by Sternberg.
11. Effects of carbon monoxide, by Remsen.
12. The sewerage of Europe, by Rudolph Hering.
13. Sanitary conditions of summer resorts.
14. Determination of organic matter in water.

Other investigations were also conducted, sanitary surveys made in a number of cities, and an endeavor made to collect sanitary information from all over the country. A weekly bulletin, which superseded that formerly put out by the Marine Hospital Service, was issued from July 5, 1879, to July 1, 1882, when publication was suspended due to lack of funds. The bulletins were resumed in 1887 by the Marine Hospital (now the Public Health) Service. An international sanitary conference was held from January 5, 1881, to March 1, 1881, with twenty-three countries represented, and a national vital statistics conference took place in Washington in May of 1880. Dr. Stephen Smith prepared a history of quarantine, and there was also a committee of the Board which attempted to codify and analyze all health laws and court decisions, though the results of this work are not to be found. Results of most of the studies were printed as appendices in the annual reports of the Board, some of these reports comprising nearly 700 pages.

The main functions of the Board, however, had to do with maritime and interstate quarantine, and with the inspection of immigrants, chiefly to keep out smallpox; these other studies were more in the nature of side issues. Quarantine rules were drafted and recommended to the states for adoption. Inspectors were employed and a number of national quarantine stations established. Shortly after the formation of the Board, yellow fever epidemics appeared at New Orleans and Memphis. Some of the states, particularly Louisiana, were not yet ready to acknowledge that quaran-

tine was national in scope, and a vast amount of friction developed during the next few years. Interference with commerce in the interests of health, no matter how humanitarian or important, also interfered with profits and finance, and trouble inevitably arose. The National Board was blamed for instigating a quarantine against New Orleans by the states of Tennessee and Mississippi, procedures which the acting governor of Louisiana denounced as "unnecessary, unwise, ungenerous, and unconstitutional." The Board was also charged with extravagance and usurpation of power. Its annual expenditures were as follows:[5]

To June 30, 1879	$ 9,146.41
Fiscal year 1880	266,762.16
Fiscal year 1881	167,681.95
Fiscal year 1882	98,523.07
Fiscal year 1883	97,332.60

The sundry civil appropriation act of August 7, 1882 (22 Stat. L., 315), restricted the duties and investigations of the National Board of Health to the diseases cholera, yellow fever, and smallpox. The emergency due to the epidemic conditions was now virtually over, and Congress began to lose interest. Although delegates from Ohio, Indiana, Illinois, Kentucky, Iowa, Tennessee, Missouri, Michigan, Wisconsin, Louisiana, Arkansas, and Mississippi met in April, 1883, and sent to President Arthur an expression of confidence in the work of the Board for interstate quarantine, and requested that a fund of $100,000 which had been authorized for emergency use (22 Stat. L., 613), be used for the purposes of the Board, interest continued to wane. For the fiscal years 1885 and 1886 the only appropriations were deficiency ones for minor expenses, such as salary of the secretary, office, etc. The secretary sued the government for compensation up to July 31, 1886, though the Board had held no meetings after November, 1884, but the United States Supreme Court, in an opinion delivered in 1892, refused to uphold this suit, on the grounds that Congress had not made the necessary appropriations.[6] The deficiency appropriation act of March 2, 1889, granted $1004 to store the records of the Board with the Surgeon General of the Army.

The National Board of Health officially ceased to exist on February 15, 1893, when an act (27 Stat. L., 449) was passed granting

[5] National Board of Health, Annual Report, 1883.
[6] Dunwoody *vs.* U. S., 143 U. S. 578; 12 S. Ct. 465 (1892).

additional powers and imposing additional duties on the Marine Hospital Service. This was the first real national quarantine law. When the act of June 2, 1879, had become inoperative, due to the expiration of the four years which it was to run, the previous act of April 29, 1878, was again revived, according to an opinion of the Attorney General.[7] Thus, the duty of coöperating with the states in matters of quarantine devolved once more upon the Marine Hospital Service after June 2, 1882, a function which was extended by the act of 1893. This later act, which is still in force and has been upheld by the courts,[8] did not prohibit the states or municipalities from maintaining quarantine stations, but provided for the taking over of them by the Secretary of the Treasury. The last station, that in New York, was surrendered in 1921. The last section of the law repealed the act of March 3, 1879, establishing the National Board of Health and directed that all its records and furniture be turned over to the Secretary of the Treasury. An attempt was made in 1899 to re-establish the Board, but the final chapter in its history had evidently been written.

Developments after 1890. Medical inspection of immigrants by Federal officials began in 1890 when officers of the Marine Hospital Service were charged with examining immigrants at the port of New York. In the following year the medical inspection of immigrants at all ports was placed in the control of this Service (26 Stat. L., 1084) and a Bureau of Immigration was established in the Treasury Department. It was transferred to the Department of Commerce and Labor in 1903 and to the Department of Labor in 1913. Medical inspection of immigrants is still conducted by officers of the Public Health Service who are assigned to the Bureau of Immigration for administrative purposes, though without giving up their status as officers under the supervision of the Surgeon-General. An act of 1893 charged consuls in foreign ports with the duty of reporting weekly on sanitary conditions and of issuing bills of health to vessels sailing to the United States (27 Stat. L., 449). Officers of the Public Health Service were

[7] 20 Op. Att. Gen. 467.

[8] Compagnie Francaise *vs.* Louisiana State Board of Health, 186 U. S. 396; 22 S. Ct. 811; 46 L. Ed. 1209 (1902). See Tobey, Public health law; A manual of law for sanitarians (1925).

authorized to be assigned to assist consuls, who are connected with the State Department, in this work.

Collection of vital statistics by Federal authorities was started in 1902 when an enabling act was passed (32 Stat. L., 52), although mortality statistics based on census returns had been published as early as 1850. A division of vital statistics was created in the Bureau of the Census, then in the Department of the Interior, transferred to the Department of Commerce and Labor in 1903, and later, in 1913, to the newly organized Department of Commerce.

The Pure Food and Drugs Act of 1906 (34 Stat. L., 763) imposed the duty of analyzing and investigating foods and drugs intended for shipment in interstate commerce on the Bureau of Chemistry, which had been elevated from a division to a bureau in the Department of Agriculture in 1897, though there had been a chemist since 1862. The control and licensing of biological products had been turned over by Congress to the Secretary of the Treasury in 1902 (32 Stat. L., 728) who assigned this duty to the Public Health Service, which issued regulations covering the subject in 1903.

Bureaus Added Since 1910. From 1910 on, numerous other bureaus concerned with public health have been set up in the National Government. In that year the Bureau of Mines was established in the Interior Department for the purpose of conducting inquiries into methods of mining with a view to promoting the safety of mines, improving conditions under which mining operations are carried on, and conducting technological investigations relating to mining and metallurgy (36 Stat. L., 369). The original organic act was revised in 1913 (37 Stat. L., 681), and the activities as there set forth included the conduct of "inquiries and scientific and technological investigations concerning mining, and the preparation, treatment, and utilization of mineral substances with a view to improving health conditions and increasing safety" . . . etc. An act of 1917 (40 Stat. L., 146) authorized the detail of medical officers of the Public Health Service to this Bureau. The Bureau of Mines was transferred to the Department of Commerce in 1925.

In 1911 a Division of School Hygiene was created in the Bureau of Education by order of the Commissioner. Medical relief for the natives of Alaska, who are under the control of the Bureau of

Education, was first authorized separately in the sundry civil appropriation act of 1915 (38 Stat. L., 862), though care of the health of the natives had been actively undertaken since 1909. An officer of the Public Health Service was detailed in 1912 to assist the Commissioner of Education in this work.

A Children's Bureau was created in the Department of Commerce and Labor in 1912 (37 Stat. L., 79) and went over to the new Department of Labor when it became separate the following year. It was charged with the investigation of all matters pertaining to the welfare of children, especially infant mortality, the birth rate, dangerous occupations, accidents, and diseases of children, and various other matters. In 1917 this Bureau administered the first Federal child labor law until it was declared unconstitutional, and in 1921 it was charged with the administration of the Federal Maternity and Infancy Act (42 Stat. L., 135).

In 1916 there was formed the Employees' Compensation Commission to administer medical relief and provide compensation to civil employees of the government (39 Stat. L., 742); and in 1917 the Federal Board for Vocational Education was created (39 Stat. L., 929) to study and supervise vocational rehabilitation of persons in the states aided by Federal grants. A Women in Industry Service had been set up in 1918 to consider industrial problems of women during the war and this was made a permanent Women's Bureau in the Department of Labor in 1920 (41 Stat. L., 987). Also as a war measure there was created in 1918 an Interdepartmental Social Hygiene Board, consisting of the Secretaries of War, Navy, and Treasury, and of the three Surgeons General or their representatives (40 Stat. L., 886). This Board had supervision over medical and educational research in the field of venereal diseases and also over the work in the states resulting from Federal subsidies. By the same act, a Division of Venereal Diseases was established in the Public Health Service. This latter is still in existence, but the Interdepartmental Board received no appropriations after 1922.

The United States Veterans' Bureau came into being in 1921 (42 Stat. L., 147), as an independent establishment, taking over the duties of the Bureau of War Risk Insurance, which had been established in the Treasury Department in 1914, and certain of the

powers previously exercised by the Federal Board of Vocational Education and the Public Health Service as they related to rehabilitation and hospital care of ex-service men. A Federal Narcotics Control Board, made up of the Secretaries of State, Treasury, and Commerce, was created in 1922 (42 Stat. L., 596) to make regulations governing the export and import of narcotic drugs. This Board functions through the Division of Customs of the Treasury Department, the law clerk of which acts as its secretary.

The last two bureaus concerned with public health to be created are both in the Department of Agriculture, and both had been divisions of other bureaus before being themselves raised to the status of bureaus. These are the Bureau of Home Economics, set up in 1923 (42 Stat. L., 1289) and the Bureau of Dairying, the act for which was passed in 1924 (43 Stat. L., 243). The former was previously a division in the States Relations Service, which had been organized in 1914 as a continuation of the Office of Experiment Stations, dating from 1888. The Bureau of Dairying had been a division in the Bureau of Animal Industry since 1895.

Development of Federal Health Legislation and Public Health and Medical Activities[*]

The following list shows in chronological order, important Federal statutes dealing with health and medical matters, the inauguration of especially important activities along these lines by the National Government, and other significant events relating to national vitality.

1789 Federal Constitution adopted.

1794 Authorizing the President to convene Congress at a place where there is no hazard to health.—Act of April 3, 1794 (1 Stat. L., 353).

1798 Authorizing the President to appoint a Physician General for the Army.—Act of May 28, 1798 (1 Stat. L., 558). Never called into service. Repealed in 1802 (2 Stat. 132).

1798 Relief of sick and disabled seamen.—Act of July 16, 1798 (1 Stat. L., 605). The foundation for the Marine Hospital Service.

1799 Extension of this relief to the Navy and provisions for expenditure of funds.—Act of March 2, 1799 (1 Stat. L., 729).

[*] This list originally appeared in Public Health Reports for July 3, 1925, and has been issued as Reprint No. 1024 by the Public Health Service.

1799 Regulating the Medical Establishment, providing for a Physician General, an Apothecary General, and a Purveyor, and other personnel in the Army.—Act of March 2, 1799 (1 Stat. L., 721).

1811 Placing naval hospitals under a board of commissioners of navy hospitals.—Act of February 26, 1811 (2 Stat. L., 650).

1813 Encouraging vaccination.—Act of February 27, 1813 (2 Stat. L., 806). Repealed in 1822 (3 Stat. L., 677).

1813 Army medical establishment reorganized.—Act of March 3, 1813 (2 Stat. L., 819).

1818 Creation of Office of Surgeon General of Army.—Act of April 14, 1818 (3 Stat. L., 426).

1821 Office of Apothecary General in Army abolished.—Act of March 2, 1821 (3 Stat. L., 615).

1832 Provision for vaccination of Indian tribes.—Act of May 5, 1832 (4 Stat. L., 514). The first law to deal with the health of Indians.

1832 Navy hospitals transferred to Secretary of the Navy.—Act of July 10, 1832 (4 Stat. L., 572).

1842 Bureau of Medicine and Surgery established in Navy Department.—Act of August 31, 1842 (5 Stat. L., 579).

1848 Examination of imported drugs and medicinal preparations by customs officers authorized.—Act of May 17, 1848 (9 Stat. L., 237). This act remained in force until the Pure Food Law of 1906.

1850 First Federal report on mortality statistics. Based on Census enumerators' returns.

1852 Appropriation of $100,000 for Government Hospital for the Insane.—Act of August 31, 1852 (10 Stat. L., 92).

1855 Government Hospital for Insane organized.—Act of March 3, 1855 (10 Stat. L., 682).

1862 Chemist appointed (August 21) in the Department of Agriculture, which had been created by the act of May 15, 1862 (12 Stat. L., 387).

1870 Marine Hospital Service definitely created.—Act of June 29, 1870 (16 Stat. L., 169).

1871 Dr. John M. Woodworth appointed (April) Supervising Surgeon of Marine Hospital Service.

1871 Establishment of Freedmen's Hospital.—Act of March 3, 1871 (16 Stat. L., 506). Placed under supervision of Secretary of War in 1872, transferred to Department of Interior in 1874.

1873 Medical and Education Division created in Office of Indian Affairs.[10] Abolished in 1877.

[10] Information from Office of Indian Affairs.

1878 Investigation of diseases of animals authorized.—Act of June 20, 1878 (20 Stat. L., 240). Also act of May 29, 1884 (23 Stat. L., 32), especially for that purpose.

1878 First quarantine law of national scope, charging officers of Marine Hospital Service with its enforcement.—Act of April 29, 1878 (20 Stat. L., 27). Other quarantine laws extending Federal aid to state and local regulations were passed in 1796, 1832, and 1866.

1879 National Board of Health established for four years.—Acts of March 3, 1879 (20 Stat. L., 484) and June 2, 1879 (21 Stat. L., 5). Appropriations were made until 1885, then discontinued. The act creating the board was repealed in 1893 (27 Stat. L., 452).

1880 Recognition in Federal statistics of a definite death registration area.[21]

1884 Bureau of Animal Industry established under Commissioner of Agriculture.—Act of May 29, 1884 (23 Stat. L., 31).

1884 Bureau of Labor established in Interior Department.—Act of June 27, 1884 (23 Stat. L., 60). Became "Department" in 1888, transferred to the Department of Commerce and Labor in 1903, and to the Department of Labor in 1913 as the Bureau of Labor Statistics. From the beginning the Bureau has investigated industrial hygiene, housing, and other socio-health conditions.

1886 Tax on oleomargarine imposed.—Act of August 2, 1886 (24 Stat. L., 209). Analytical work done by the Analytical and Chemical Division of the Bureau of Internal Revenue until the passage of the Pure Food Law of 1906, when it was transferred to the Bureau of Chemistry.

1890 First effective measure dealing with interstate control of disease.—Act of March 27, 1890 (26 Stat. L., 31).

1890 Medical inspection of immigrants by Federal officers of the Marine Hospital Service begun (April) at the Port of New York. An act of 1882 (22 Stat. L., 214) was the first to place restrictions on the admission of defective aliens.

1891 Medical inspection of immigrants extended to all ports.—Act of March 3, 1891 (26 Stat. L., 1084).

1893 New quarantine act. Extension of activities of Marine Hospital Service.—Act of February 15, 1893 (27 Stat. L., 449). Still in force. Amended in 1901 (31 Stat. L., 1086).

1894 Appropriation of $10,000 to Department of Agriculture for a study of nutrition.—Act of August 8, 1894 (27 Stat. L., 264).

[21] Information from Division of Vital Statistics, Bureau of the Census.

1901 Appropriation for Hygienic Laboratory under Marine Hospital Service.—Act of March 3, 1901 (31 Stat. L., 1137). It was not occupied until 1904.

1902 Collection of vital statistics by Bureau of the Census (Department of the Interior; transferred to Department of Commerce and Labor in 1903, and to Department of Commerce in 1913) authorized.—Act of March 6, 1902 (32 Stat. L., 52), amended by act of April 27, 1904 (33 Stat. L., 362). An act of July 1, 1902 (32 Stat. L., 714), authorized the Public Health and Marine Hospital Service to prepare forms and compile vital statistics.

1902 Division of Chemistry raised to status of a Bureau in the Department of Agriculture.—Act of June 3, 1902 (32 Stat. L., 303).

1902 Name of Marine Hospital Service changed to Public Health and Marine Hospital Service.—Act of July 1, 1902 (32 Stat. L., 712). Various other new provisions.

1902 Tests and control of biological products in interstate commerce.—Act of July 1, 1902 (32 Stat. L., 728). This duty was turned over to Public Health and Marine Hospital Service, which issued the first regulations on February 21, 1903.

1905 Leprosy hospital established in Hawaii.—Act of March 3, 1905 (33 Stat. L., 1009). Operated by Public Health and Marine Hospital Service. An investigation of leprosy had been authorized in 1899 (30 Stat. L., 976).

1906 Pure Food and Drugs law. Increase of scope of Bureau of Chemistry.—Act of June 30, 1906 (34 Stat. L., 768). In 1918 detail of Public Health Service officers to this Bureau was authorized (40 Stat. L., 992).

1906 Meat Inspection law. Increase of scope of Bureau of Animal Industry.—Act of June 30, 1906 (34 Stat. L., 679). Other meat inspection laws had been passed in 1890 (26 Stat. L., 414), 1891 (26 Stat. L., 1090), and 1895 (28 Stat. L., 732).

1906 Extension of national control of quarantine by purchase of local stations.—Act of June 19, 1906 (34 Stat. L., 299).

1909 First organized medical relief for natives of Alaska. Under jurisdiction of Bureau of Education (Department of the Interior). The first definite appropriation for this purpose was not made until 1915 (38 Stat. L., 822, 862). An officer of the Public Health Service was detailed to assist in health work in Alaska in 1912, following a survey made by the Service in 1911.

1909 Creation of a health section in the Educational Division of the Office of Indian Affairs, presumably by department order.

1909 National Bureau of Health advocated by President Taft in his first annual message on December 7. He repeated this recommendation in his second message on December 6, 1910. Bills to this end were introduced in Congress, but were not successful.

1910 Bureau of Mines established in Department of the Interior. Act of May 16, 1910 (36 Stat. L., 369). This was revised in 1913 (37 Stat. L., 681). Investigations to improve the health and safety of miners authorized. An act of June 12, 1917 (40 Stat. L., 146) authorized detail of Public Health Service officers to the Bureau.

1910 Law prohibiting white slave traffic passed.—Act of June 25, 1910 (36 Stat. L., 825).

1911 Division of School Hygiene in the Bureau of Education of the Interior Department established by order of the Commissioner of Education.

1912 Children's Bureau established in the Department of Commerce and Labor.—Act of April 9, 1912 (37 Stat. L., 79).

1912 Tax imposed on white phosphorus matches.—Act of April 9, 1912 (37 Stat. L., 81).

1912 Name of Public Health and Marine Hospital Service changed to Public Health Service and field of action somewhat extended.—Act of August 14, 1912 (37 Stat. L., 309).

1914 Anti-narcotic law, the so-called Harrison Act, passed.—Act of December 17, 1914 (38 Stat. L., 785).

1915 Recognition in Federal statistics of a definite birth registration area.[12]

1916 First Federal child labor law.—Act of September 1, 1916 (39 Stat. L., 675). Administered by Children's Bureau. Declared unconstitutional, June 3, 1918.

1916 Federal employees' compensation law.—Act of September 7, 1916 (39 Stat. L., 742).

1917 Federal leprosy hospital authorized.—Act of February 3, 1917 (39 Stat. L., 872). Not occupied until 1920.

1917 New immigration law.—Act of February 5, 1917 (39 Stat. L., 874). Provisions controlling medical examination now in force.

1917 Federal Board for Vocational Education established.—Act of February 23, 1917 (39 Stat. L., 929). A previous law in 1914 had authorized Federal aid to the states (38 Stat. L., 372).

1918 The World War. An order placing all Federal health work, except that of the Army, Navy, and Bureau of Labor

[12] Information from Division of Vital Statistics, Bureau of the Census.

Statistics, under the Secretary of the Treasury, through the Public Health Service, was issued by President Wilson on July 1, 1918.

1918 A Division of Venereal Diseases created in the Public Health Service, and also an Interdepartmental Social Hygiene Board.—Act of July 9, 1918 (40 Stat. L., 886). The latter has received no appropriations since 1922.

1918 The Women in Industry Service created in the Department of Labor.—Act of July 1, 1918 (40 Stat. L., 634). Became a Women's Bureau in 1920.—Act of June 5, 1920 (41 Stat. L., 987).

1918 The influenza epidemic. In October one million dollars was appropriated to enable the Public Health Service to combat and suppress the disease (40 Stat. L., 1088).

1919 The child labor tax law, administered by the Bureau of Internal Revenue (40 Stat. L., 1138). Declared unconstitutional in 1922.

1919 Public Health Service authorized to give medical relief to war veterans.—Act of March 3, 1919 (40 Stat. L., 173). The Service had already been doing this since October, 1917, through an arrangement with the Bureau of War Risk Insurance. The work was turned over to the Veteran's Bureau when it was created in 1921.—Act of August 9, 1921 (42 Stat. L., 147).

1921 Maternity and Infancy Law passed. Increase of scope of Children's Bureau.—Act of November 23, 1921 (42 Stat. L., 135).

1922 Increase of compensation for commissioned officers of Public Health Service.—Act of June 10, 1922 (42 Stat. L., 625).

1922 Welfare Division established in the Post Office Department by order of the Postmaster General. Now known as the Service Relations Division.

1922 Federal Narcotics Control Board created.—Act of May 26, 1922 (42 Stat. L., 596). The act prohibits the importation of crude opium for other than medicinal uses.

1923 Bureau of Home Economics established in the Department of Agriculture.—Act of February 26, 1923 (42 Stat. 1289). This Bureau had been a division of the States Relations Service since 1915, and previously studies had been made under the Office of Experiment Stations since 1894.

1924 Bureau of Dairying established in the Department of Agriculture.—Act of May 29, 1924 (43 Stat. L., 243). This bureau had been a division of the Bureau of Animal Industry since 1895.

CHAPTER V

PUBLIC HEALTH AND THE UNITED STATES SUPREME COURT[1]

The United States Supreme Court, as the court of final appeal in this country, has on numerous occasions been called upon to adjudicate matters directly affecting national vitality. Of the approximately 30,000 decisions handed down by this tribunal during its existence, about one hundred have been directly concerned with the public health. These opinions may also contain other important legal principles, and many of the numerous decisions not directly on this subject may, nevertheless, be of great significance to public health. This latter proposition is especially true with regard to cases involving the police power, as the care of the public health is an acknowledged part of the power.

Under the American plan of government the protection and promotion of the public health is vested primarily in each of the individual states. The police power was possessed by the states before the Federal Constitution was adopted in 1789 and was not relinquished by them at that time. The police power is, however, subject to constitutional limitations, and the legal questions which have arisen for determination have frequently concerned supposed or actual conflicts between the exercise of this police power by the states and certain parts of the Federal Constitution, including the commerce clause; taxation rights; privileges of citizens, such as guaranteed by the Fourteenth Amendment; freedom of contract; and various other matters. Thus, if the general subjects involved in these numerous opinions affecting public health are examined, it is discovered that they have dealt with such matters as: quarantine and inspection; stream pollution and water rights; nuisance control; milk and food supervision; vaccination; industrial conditions affecting health, such as hours of labor and child labor;

[1] This chapter originally appeared as an article in the *American Bar Association Journal,* November, 1925.

animal diseases and quarantines; narcotics; white slaves; and maternity and infancy.

These cases have, of course, been often discussed by legal writers and political scientists, but there does not seem to be any treatment of them purely under the heading of public health. Such a discussion is of importance and value to sanitarians and public health administrators, especially in connection with the present study of the more effective correlation of the many scattered Federal health agencies. This survey of the pronouncements of the United States Supreme Court on public health is, in fact, a necessary part of the larger study on the National Government and public health. Elsewhere in this book the development of Federal legislation on this subject and also the interest manifested in public health, as shown by the messages of the Presidents, have been described.

Public Health and the Police Power. The important decisions on public health range over a period of one hundred years, as the first to deal directly with the subject was not delivered until thirty-five years after the adoption of the Constitution. In 1824 Chief Justice Marshall presented his famous opinion in Gibbons *vs.* Ogden,[2] a decision which established the proposition that navigation is a part of commerce and that the regulation of interstate commerce is a Federal and not a state function. Since this case held unconstitutional a law of New York granting to Robert Livingston and Robert Fulton exclusive navigation privileges on the waters in that state, on the grounds that such regulation was a Federal matter, the court found it necessary to discuss the scope of state laws. Both sides in their arguments had used quarantine acts as examples upholding their particular contentions, and so Chief Justice Marshall paid some attention to the subject, saying of laws coming under the police power:

> They form a portion of that immense mass of legislation which embraces everything within the territory of the state, not surrendered to the general government; all which can most advantageously be exercised by the states themselves. Inspection laws, quarantine laws, health laws of every description . . . are component parts of this mass.[3]

[2] 9 Wheat. 1; 6 L. Ed. 23.
[3] 9 Wheat. 205.

He also mentioned the Federal quarantine acts of 1796 and 1799, and wrote that the local laws on this subject are undoubtedly constitutional, but that Congress can, nevertheless, regulate commerce. A significant statement refers to "the acknowledged power of a state, to provide for the health of its citizens." This decision, though not induced by a health matter, is often cited as having established the proposition that while the care of the public health is a part of the police power, the regulation of commerce is exclusively for the National Government. More exact pronouncements of the relationship between state health regulations and the Federal control of commerce were to come frequently in later years.

Three years after Gibbons *vs.* Ogden, another state law was held unconstitutional as an infringement on Federal rights and powers. This was in the case of Brown *vs.* Maryland,[4] in which a requirement of licenses for importers and wholesalers was declared invalid. In the course of this decision, Marshall again took occasion to uphold inspection laws as an exception to the prohibition against state interference with interstate commerce, saying, "Indeed the laws of the United States expressly sanction the health laws of a state."[5] The case for the state in Brown *vs.* Maryland was argued by Roger Taney who twenty years later, as Chief Justice of the Supreme Court was to deliver an opinion in the Licenses Cases.[6] These decisions upheld state laws of Massachusetts, Rhode Island, and New Hampshire requiring licenses for the sale of liquor. These licenses were justified on the grounds that they were within the police power of the states, especially with regard to the duty to protect the public health and the public morals. As Taney said, "A state . . . is not bound . . . to abstain from the passage of any law which it may deem necessary or advisable to guard the health . . . of its citizens, although such law may discourage importation, or diminish the profits of the importer, or lessen the revenue of the general government."[7] There was much discussion in these cases of public health as a part of police power,

[4] 12 Wheat. 419; 6 L. Ed. 678.
[5] 12 Wheat. 444.
[6] 5 How. 504; 12 L. Ed. 256.
[7] 5 How. 577.

Justice McLean saying, "Everything prejudicial to the health or morals of a city may be removed." [8]

Just as the License Cases pointed to the extent of the police power, the Passenger Cases [9] two years later (1849) indicated its limitations. This was the first instance of a controversy before this court which had arisen from what was apparently a health matter, as one of the laws assailed was a New York statute imposing on vessels a tax which was collected by the health commissioner. The revenue was not used for quarantine, however, and the court decreed that this law and a somewhat similar one in Massachusetts were unconstitutional as interfering with commerce. The act of New York was held not to be a true health law, for as Justice McLean said, "In guarding the safety, health, and the morals of its citizens, a state is restricted to appropriate and constitutional means." Another brief decision in 1873, Peete *vs.* Morgan,[10] held that a state to defray quarantine expenses can not impose a tonnage tax on vessels.

Nuisances and the Police Power. The last quarter of the nineteenth century saw a number of decisions of significance to public health. In 1872 the Slaughter House Cases [11] upheld a state law regulating slaughter houses as a proper police measure, for the health and comfort of the people. This law, a Louisiana statute, had granted to one corporation the exclusive right to maintain slaughter houses in that state, and it was attacked on this ground. A divided court upheld the law, however. In 1878 another nuisance case arose, that of Fertilizing Company *vs.* Hyde Park,[12] from Illinois. Here a municipal ordinance to abate nuisances was held superior to a charter granting certain privileges to a corporation. Nuisance abatement was declared to be a part of the police power. During the first decade of the twentieth century, a half a dozen or more decisions involving nuisance control were handed down. In 1904 Dobbins *vs.* Los Angeles [13] held void a municipal ordinance fixing limits in which gas works might be erected, this being con-

[8] 5 How. 588.
[9] 7 How. 283; 12 L. Ed. 702.
[10] 19 Wall. 581.
[11] 16 Wall. 36; 21 L. Ed. 394.
[12] 97 U. S. 659.
[13] 195 U. S. 223.

sidered beyond the scope of the police power. The liberality with which courts should construe real health regulations, was, however, expressed by Justice Day in these words, "It may be admitted that every intendent is to be made in favor of the lawfulness of the exercise of municipal power, making regulations to promote the public health and safety, and that it is not the province of the courts except in clear cases, to interfere with the exercise of the power reposed by law in municipal corporations for the protection of local rights and the health and welfare of the people of the community." [14]

Shortly thereafter the court sustained municipal ordinances regulating the disposal of garbage, as health regulations. These cases, California Reduction Company *vs.* Sanitary Reduction Works [15] and Gardner *vs.* Michigan,[16] were decided in 1905, Justice Harlan reading the opinion. Sanitarians to-day do not consider garbage disposal of great significance to public health and, in fact, class nuisance control as of relatively minor importance in health administration.[17] Nuisances have, however, always bulked large in public health law, perhaps improperly so.

In 1907 the Supreme Court granted an injunction to restrain a manufacturing plant from discharging noxious fumes to the detriment of the inhabitants of a neighboring state. This was the case of Georgia *vs.* Tennessee Copper Co.[18] Two years later a local ordinance prohibiting burials in city limits for sanitary reasons was upheld in Laurel Hill Cemetery *vs.* San Francisco,[19] the court stating that if the legislature had seen fit to call this a public health matter, that must suffice. Modern sanitary science would not be inclined to admit it to be at all concerned with health. In 1916 a municipal ordinance relative to smoke abatement was sustained in Northwestern Laundry Co. *vs.* Des Moines,[20] and in 1921 street cleaning was declared in Harris *vs.* D. C.[21] to be a governmental

[14] 195 U. S. 235, 236.
[15] 199 U. S. 306.
[16] 199 U. S. 325.
[17] See Tobey, Public health law; a manual of law for sanitarians (1925).
[18] 206 U. S. 230; 27 S. Ct. 618; 51 L. Ed. 618.
[19] 216 U. S. 358.
[20] 239 U. S. 486; 36 S. Ct. 206; 60 L. Ed. 396.
[21] 256 U. S. 650; 41 S. Ct. 610; 65 L. Ed. 1146.

function of municipalities for the protection of health. Previously, in 1913, a local ordinance requiring property to be connected with a public sewer had been sustained in Hutchinson *vs.* Valdosta.[22]

State versus State. The Georgia *vs.* Tennessee Copper case in 1907 had been preceded by several others of similar nature, involving controversies between states themselves. Towards the end of the nineteenth century, yellow fever was prevalent in New Orleans and the State Health Officer of Texas placed a quarantine against persons and materials from that city. The State of Louisiana thereupon brought an original action against the State of Texas,[23] but the Supreme Court in 1900, after much discussion as to what constituted a cause of action between states, dismissed the case on the grounds that the State Health Officer had exceeded his authority and, besides, that the State of Louisiana as such was not concerned. It is somewhat difficult to reconcile this opinion with later ones which arose between states relative to health matters. In 1901, for instance, Missouri brought suit against Illinois[24] on account of danger of sewage pollution of the Mississippi River. Here Justice Shiras said, "But it must surely be conceded that, if the health and comfort of the inhabitants of a state are threatened, the state is the proper party to represent and defend them." The action was allowed to be brought, but after presentation of the case, the court in 1905 refused to grant the injunction.[25] In 1925 the Supreme Court handed down an opinion in the case of the Sanitary District of Chicago *vs.* United States,[26] enjoining the Sanitary District from drawing more water for sewage disposal than was permitted by the Secretary of War. In 1921 an injunction had been denied in the so-called Passaic Valley Sewage case, in which New York brought suit against New Jersey.[27] The Court suggested that cooperation might be more effective than court action in solving this problem.

[22] 227 U. S. 303; 33 S. Ct. 290; 57 L. Ed. 520. Sweet *vs.* Rechel 159 U. S. 380; 40 L. Ed. 188 (1895) had upheld taking of land to abate a nuisance.
[23] 176 U. S. 1, 20 S. Ct. 251, 44 L. Ed. 347.
[24] 180 U. S. 208, 21 S. Ct. 331, 45 L. Ed. 497.
[25] 200 U. S. 496, 50 L. Ed. 572.
[26] 266 U. S. 405 69 L. Ed.
[27] Public Health Service, Public Health Reports, June 3, 1921.

Animal Diseases and Quarantine. About the same time as the early nuisance cases, arose the first of a long line of decisions regarding the power of a state to regulate and control animals which are diseased. Hannibal *vs.* Husen,[28] decided in 1877, held that a Missouri law prohibiting the driving of Texas cattle into Missouri between March and November was unconstitutional as more than a quarantine law. Justice Strong characterized it as an interference with interstate commerce, saying, "While we unhesitatingly admit that a state may pass sanitary laws, and laws for the protection of life, liberty, health, or property within its borders; while it may prevent persons and animals suffering under contagious or infectious diseases, or convicts, etc., from entering the state; while for the purpose of self-protection it may establish quarantine, and reasonable inspection laws, it may not interfere with transportation into or through the state, beyond what is absolutely necessary for self protection."[29] A dozen years later, in Kimmish *vs.* Ball,[30] an Iowa law providing a basis of damage actions for causing the spread of Texas fever in cattle was upheld, and in 1898, in Missouri, etc., R. Co. *vs.* Haber,[31] a similar law was sustained. Rasmussen *vs.* Idaho,[32] decided in 1901, approved a state cattle quarantine law, the distinction between this case and the earlier one of Hannibal *vs.* Husen being that in the earlier case, the law was discriminatory, while in this later one it was not. Smith *vs.* St. Louis,[33] Reid *vs.* Colorado,[34] and Asbell *vs.* Kansas[35] follow the Rasmussen case. In all of these, there occurs considerable discussion of the police power.

Quarantine and General Health Matters. After the early decisions affecting health laws under the police power, a number of others of importance to quarantine and general health were delivered. Since 1885 such cases have, in fact, occurred almost

[28] 95 U. S. 465; 24 L. Ed. 527.
[29] 95 U. S. 472.
[30] 129 U. S. 220.
[31] 169 U. S. 636.
[32] 181 U. S. 198; 21 S. Ct. 594; 45 L. Ed. 820.
[33] 181 U. S. 248; 21 S. Ct. 603; 45 L. Ed. 847.
[34] 187 U. S. 137; 23 S. Ct. 92; 47 L. Ed. 108.
[35] 209 U. S. 251 (1908).

yearly, and sometimes there have been several in a year. The decision in Barbier *vs.* Connolly,[36] rendered in 1885, upheld as a proper police regulation a San Francisco ordinance regulating laundries and requiring a certificate from the health officer and fire warden. In the following year, however, in Yick Wo *vs.* Hopkins,[37] an ordinance of the same city was held void for discrimination against Chinese laundrymen. A state quarantine law was upheld in 1886 in Morgan *vs.* Louisiana,[38] even though fees were imposed. The Court in its decision recognized the right of the Federal Government to provide a national quarantine system, though such a law was not actually passed by Congress until 1893. Mugler *vs.* Kansas (1887),[39] Lawton *vs.* Steele (1894),[40] and Hennington *vs.* Georgia (1895)[41] were cases of importance to public health in succeeding years, though none of them was directly on that subject but dealt with the scope of the police power. In 1902 occurred the decision in Compagnie Francaise de Navigation a Vapeur *vs.* Louisiana State Board of Health,[42] which sustained a state law excluding healthy persons from unhealthy localities. This opinion also upheld the Federal quarantine law of 1893.[43] A Federal law of 1903 excluding aliens with contagious disease was pronounced valid in Oceanic Steam Navigation Company *vs.* Stranahan,[44] decided in 1909.

Compulsory vaccination laws of a state were upheld in 1904 in the notable case of Jacobson *vs.* Massachusetts.[45] Previously, in Lawton *vs.* Steele, the Court had remarked obiter that compulsory vaccination of children formed a part of the police power. In the Jacobson case, however, this issue was squarely before it and the Court decided that it was solely the function of the legislature to decide that vaccination was efficacious and necessary to preserve

[36] 113 U. S. 27; 5 S. Ct. 357; 28 L. Ed. 923.
[37] 118 U. S. 356; 6 S. Ct. 1064; 30 L. Ed. 220.
[38] 118 U. S. 455; 6 S. Ct. 1114; 30 L. Ed. 237.
[39] 123 U. S. 623; 8 S. Ct. 273; 31 L. Ed. 205.
[40] 152 U. S. 133; 14 S. Ct. 499; 38 L. Ed. 338.
[41] 163 U. S. 299; 16 S. Ct. 1086; 41 L. Ed. 166.
[42] 186 U. S. 380; 22 S. Ct. 811; 46 L. Ed. 1209.
[43] 27 Stat. 449.
[44] 214 U. S. 320; 29 S. Ct. 671; 53 L. Ed. 1013.
[45] 197 U. S. 11; 25 S. Ct. 358; 49 L. Ed. 643; 3 Ann. Cas. 765.

public health. A law to this effect was a valid exercise of the police power and its administration could be delegated to local authorities. Again in 1922, in Zucht *vs.* King,[46] exactly the same stand was taken.

Purity and Adulteration of Foods. The United States Supreme Court has been called upon to decide many cases having to do with foods and food products and their regulation either by states or the Federal Government. Some of these cases have, however, pertained more to fraud than to the public health. The first of these, Powell *vs.* Pennsylvania,[47] decided in 1888, was concerned with oleomargarine, and upheld a state law regulating this commodity. A similar result was reached in 1894 in Plumely *vs.* Massachusetts,[48] but in Schollenberger *vs.* Pennsylvania,[49] in 1897, it was held that while oleomargarine could be regulated within a state, it could not be excluded from a state, being a proper article of commerce. Capital City Dairy *vs.* Ohio [50] in 1902 sustained a state law requiring analysis of oleomargarine by the state, and McCray *vs.* U. S.[51] in 1904 upheld the Federal tax which had been imposed on this substance in 1886.

Milk control regulations were found good in five important decisions in the early 1900's. The Reid *vs.* Colorado (1902) case, mentioned above, held that impure milk could be kept out of a municipality, while Fischer *vs.* St. Louis [52] in 1904 refused to hold invalid a municipal ordinance, authorized by state legislation, which prohibited the erection of a cow stable within the city limits. Lieberman *vs.* Van De Carr,[53] the leading case on this subject, sustained in 1904 a local sanitary code in regulating milk, and St. John *vs.* New York,[54] which followed it in 1906, said that such legislation might properly classify persons and objects for the purpose of regulation.

[46] 260 U. S. 174.
[47] 127 U. S. 678; 8 S. Ct. 992; 32 L. Ed. 253.
[48] 155 U. S. 461; 39 L. Ed. 223.
[49] 171 U. S. 1; 43 L. Ed. 49.
[50] 183 U. S. 238; 46 L. Ed. 171.
[51] 195 U. S. 27; 24 S. Ct. 769; 49 L. Ed. 78; 1 Ann. Cas. 561.
[52] 194 U. S. 361; 48 L. Ed. 1018.
[53] 199 U. S. 552; 26 S. Ct. 144; 50 L. Ed. 305.
[54] 201 U. S. 633; 26 S. Ct. 554; 50 L. Ed. 896.

Other decisions pertaining to foods are those upholding the Federal Pure Food and Drugs Act of 1906;[55] an important decision in 1908, North American Cold Storage Co. *vs.* Chicago,[56] which held valid a municipal ordinance for the seizure and destruction of unwholesome food; while state laws regulating the quality of ice cream and the manufacture and sale of milk blended with fats other than milk fats were upheld in Hutchinson Ice Cream Co. *vs.* Iowa[57] (1916), and Hebe Co. *vs.* Shaw[58] (1919), respectively. A general pure food law of a state was upheld in Price *vs.* Illinois[59] in 1915.

Industrial Conditions Affecting Health. Hours of labor and other industrial conditions affecting health which the states have attempted to control have presented some knotty problems to the Supreme Court. In 1898 in Holden *vs.* Hardy,[60] a Utah statute restricting the labor of miners to eight hours a day was adjudged a good health law, and in 1903 an eight-hour day for state and municipal employees was pronounced valid in Atkin *vs.* Kansas.[61] In 1905, however, came the much discussed case of Lochner *vs.* New York,[62] in which a divided court reversed the action of the Court of Appeals of New York and held unconstitutional a state law limiting the hours of labor of bakers. The reason given for this decision was that the law in question had exceeded the limits of the police power, was not valid as a health law, and was an improper interference with the freedom of contract. From the standpoint of public health, the opinion was wrong, and able writers have questioned its legal soundness. The Court set itself up as a fact-finding body, though that was the function of the legislature, a function which has been readily accepted in many other decisions, such as that of Jacobson *vs.* Massachusetts. At any rate, the Court subsequently has more or less ignored this decision and Bunting *vs.*

[55] Hipolite Egg Co. *vs.* U. S. (1911); 220 U. S. 31; 45, S. Ct. 364; 55 L. Ed. 364; McDermott *vs.* Wisconsin (1913), 228 U. S. 115 held void a state law conflicting with the Federal statute.
[56] 211 U. S. 306; 29 S. Ct. 101; 53 L. Ed. 195; 15 Ann. Cas. 276.
[57] 242 U. S. 153.
[58] 248 U. S. 297.
[59] 238 U. S. 446; 36 S. Ct. 892; 59 L. Ed. 1400.
[60] 169 U. S. 366; 18 S. Ct. 383; 42 L. Ed. 780.
[61] 191 U. S. 207; 24 S. Ct. 124; 48 L. Ed. 148.
[62] 198 U. S. 45; 49 L. Ed. 937.

Oregon,[63] decided in 1917, practically overruled it by upholding a state law regulating hours of labor.

Industrial conditions especially affecting women have fared more liberally in the opinions, for in 1908 a state law regulating hours of labor for females was upheld in Muller *vs.* Oregon,[64] as essential to the welfare of the race, and several similar measures were approved in 1914 and 1915.[65] That this principle does not extend to compensation of women, was shown by a decision in 1923, holding unconstitutional the minimum wage law passed by Congress as a health and welfare measure for the women of the District of Columbia.[66] A state law prohibiting employment of women in restaurants in large cities between 10 p. m. and 6 a. m. was, however, declared a constitutional exercise of the police power in 1924 in Radice *vs.* New York.[67]

On two occasions Congress has endeavored to cope with the evil of child labor. The first Federal law on this subject prohibited the shipment in interstate commerce of the products of child labor. It was held unconstitutional in 1918 in Hammer *vs.* Dagenhart,[68] as an unwarranted interference with state control over internal matters. Congress then placed a prohibitive tax on child labor, but this law was also declared unconstitutional in 1922 in Bailey *vs.* Drexel.[69] In the latter case the decision was unanimous, while in the former the Court was divided.

A case of somewhat similar interest was the recent one (1923) of Massachusetts *vs.* Mellon,[70] in which the state and a taxpayer contested the constitutionality of the Federal Maternity and Infancy Act granting subsidies to those states accepting the terms of the act. The Court denied the suit on the grounds that neither of the plaintiffs had sufficient status to bring a cause of action, and did not actually pass upon the constitutionality of the law.

[63] 243 U. S. 426.
[64] 208 U. S. 412; 28 S. Ct. 324; 52 L. ed. 551.
[65] Riley *vs.* Massachusetts, 232 U. S. 671 (1914); Miller *vs.* Wilson, 236 U. S. 373 (1915); Bosley *vs.* McLaughlin, 236 U. S. 385 (1915).
[66] Adkins *vs.* Children's Hospital, 261 U. S. 525; 43 S. Ct. 394; 67 L. Ed. 785.
[67] 264 U. S. 292; 44 S. Ct. 325; 68 L. Ed. 690.
[68] 247 U. S. 251; 38 S. Ct. 529; 62 L. Ed. 1101; Ann. Cas. 1918 E. 724; 3 A. L. R. 649.
[69] 259 U. S. 20; 42 S. Ct. 449; 66 L. Ed. 817.
[70] 262 U. S. 447; 43 S. Ct. 597; 67 L. Ed. 1078.

Miscellaneous Subjects Affecting Health. The practice of medicine may be regulated by the state, and various conditions imposed on those desiring to practise healing arts, according to half a dozen decisions, of which the leading one is Dent *vs.* West Virginia,[71] dating from 1889.

Federal legislation regarding transportation of women in interstate commerce for immoral purposes, the so-called white slave laws, have been upheld in several cases.[72] The postal laws were held in 1902 [73] not to debar the use of the mails to treatises on mental healing, when the efficacy of such measures was a matter of opinion and not necessarily a fraud. A state law regulating dogs was upheld in 1896 as a valid exercise of the police power.[74] There have been a number of decisions to the effect that land may be taken by eminent domain by a municipality for a water works, but these need not be cited here. A review of legislation referring to the National Board of Health which was established in 1879, for a four-year period, appears in Dunwoody *vs.* U. S.[75]

Summary. Legal precepts on public health, as enunciated by the United States Supreme Court, may be summarized as follows: The care of the public health forms a part of the police power of the states. This power may be exercised in any reasonable manner by the states, and so long as appropriate and constitutional means are employed, may even interfere with interstate commerce. Protection of national health, by control over interstate commerce itself, is, however, a Federal matter. Just as the improper use of the police power by the states must not interfere with interstate

[71] 129 U. S. 114; 32 L. Ed. 623. See also: Hawker *vs.* New York (1897), 170 U. S. 189; 42 L. Ed. 1002. Reetz *vs.* Michigan (1903); 188 U. S. 505; 47 L. Ed. 563. Watson *vs.* Maryland (1910), 218 U. S. 173; 30 S. Ct. 644; 54 L. Ed. 987. Collins *vs.* Texas (1911), 223 U. S. 288; 32 S. Ct. 286; 56 L. Ed. 439.

[72] Hoke *vs.* U. S. (1913), 227 U. S. 308; 33 S. Ct. 281; 57 L. Ed. 523; Ann. Cas. 1913 E. 905; 43 L. R. A. (N. S.) 906. Athanasaw *vs.* U. S. (1913) 227 U. S. 326. Wilson *vs.* U. S. (1914), 232 U. S. 563. Caminetti *vs.* U. S. (1916), 242 U. S. 470; 37 S. Ct. 192; 61 L. Ed. 442, Ann. Cas. 1917 B. 1168.

[73] American School of Magnetic Healing *vs.* McAnulty (1902), 187 U. S. 94; 23 S. Ct. 33; 47 L. Ed. 90.

[74] Sentell *vs.* New Orleans (1896), 166 U. S. 705; 17 S. Ct. 693; 41 L. Ed. 1169.

[75] 143 U. S. 578; 36 L. Ed. 269.

commerce, so too the control over interstate commerce by the Federal Government must not nullify the police power of the states. Constitutional requirements as to freedom of contract, due process of law, equal protection of the laws, religious freedom, and the like, must yield to the reasonable exercise of the police power when validly applied to the protection of the public health, as by the regulation of nuisances, by quarantine and inspection, by compulsory vaccination, by regulation of food, or by control of industrial conditions directly affecting health. There are limits to the extent of the police power, however, and when its administration exceeds a reasonable operation, contrary to constitutional inhibitions, such operation is invalid. Laws affecting national vitality may be enacted by Congress in strict accordance with the authority, express and implied, of the commerce clause, the taxing clause, and other apposite portions of the Federal Constitution.

CHAPTER VI

THE RELATION OF THE NATIONAL GOVERNMENT TO STATE AND LOCAL HEALTH ADMINISTRATION

Public Health Responsibility in the United States. The federal government is now conceded to possess certain legitimate public health functions, but the care of the health of the individual citizen is to-day and always has been a responsibility entrusted primarily to the states themselves. In order to understand why there is apparently some division of responsibility between the national and state governments with respect to matters affecting the public health as a whole, it is necessary to have a clear conception of the source of public health authority in this country, the exact rôle of the federal government in public health activities, the organization and functions of the states along these lines, and the inter-relationships of the central government and the forty-eight states in public health matters.[1]

Long before the Federal Constitution was adopted, each of the colonies had to some extent attempted to control the health of its inhabitants. Quarantine laws had been passed, nuisances regulated, and such other measures as were then considered necessary had been taken to preserve the health of the people. The framers of the Constitution were evidently content to leave this duty with the individual states, for in none of the enumerated powers of the national government did they mention health. This power over the public health, not having been relinquished to the central government, was, therefore, continued and maintained by the states after the Federal Constitution was adopted in 1789.

The right of the states to exercise control over all internal matters within their own jurisdiction is known as the police power. It has been defined as the inherent power of sovereignty to make rules

[1] The legal basis of public health is described in more detail in the author's book, Public health law.

and regulations in the interests of the health, safety, morals, and general welfare of the people. Such regulations are subject, however, to the limitations contained within the Federal Constitution, which is the supreme law of the United States. From this document is derived the power of the Federal Government to undertake certain activities, such as to control commerce, impose taxes, etc., which may directly or indirectly affect national vitality. The source of public health authority in this country lies, therefore, in the powers granted to the federal government and enumerated in the Constitution, and in the inherent police power of the states. By implication this police power is specifically reserved to the states by the Tenth Amendment.[2]

Source of Federal Health Powers. Although there is no mention of health in the Constitution, the term "general welfare" occurs twice, and this has been argued by some as encompassing public health. The preamble,[3] for instance, states that one of the ends sought by adopting the Constitution is the promotion of the general welfare, but this preamble is merely declaratory of the purposes of the instrument, and has no real legal effect. Again, in the first paragraph of Section 8 of Article I, which sets forth the powers of Congress, occurs the term "general welfare," and it is there stated that Congress is authorized to lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defense and general welfare. There is no exact definition of this last term, and the determination of its real extent and limitations has given rise to much controversy. There is to-day no doubt, however, but that under the authority of this whole section Congress may pass measures which affect the public health. This is, therefore, one of the sources of the Federal authority over national vitality.

The Federal Taxing Power. The power to tax has also been said to be the power to destroy. It carries with it the incidental

[2] "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively or to the people."

[3] "We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America."

right to regulate, or even to prohibit, as well as to raise revenue. Thus, Congress has placed a tax on white phosphorus matches (Act of April 9, 1912; 37 Stat. L., 81), the effect of which has been to drive this poisonous industry out of business. This law has, however, never been contested in the courts. So, too, a federal tax was placed on Oleomargarine (Act of August 2, 1886; 24 Stat. L., 209), and this has been upheld by the United States Supreme Court. Taxes on physicians who prescribe narcotics have similarly been upheld. There is a limit to this power, however, as has been shown by the fact that the Supreme Court declared unconstitutional a congressional enactment placing a prohibitive tax on products made within the states by child labor.[4] This law was held invalid on the ground that it was clearly an attempt to encroach on the prerogatives of the states and their right to administer their own internal affairs.

Federal Subsidies to the States. Coincident with the taxing power is the authority to appropriate money for the purposes of government. Under this authority Congress has created various federal departments and bureaus and turned over to them certain duties and functions, the primary authority for which is derived directly or by implication from the Constitution.

Under the appropriation power the federal government may also appropriate money to be used by the states in certain worthy projects. This procedure began in 1862 when public lands and funds therefrom were granted to the states to assist in the maintenance of certain educational institutions which later became known as "land grant" colleges (12 Stat. L., 503). Since that time the system has spread, and laws have been passed, among others, making federal grants to the states for purposes of agricultural education and aid (Act of May 8, 1914; 38 Stat. L., 372), vocational education (Act of February 23, 1917; 39 Stat. L., 929), control of venereal diseases (Act of July 9, 1918; 40 Stat. L., 886), and the promotion of the hygiene of maternity and infancy (Act of November 23, 1921, 42 Stat. L., 135).

This last named law was contested in the courts, the Commonwealth of Massachusetts and a taxpayer of that state each having

[4] Bailey *vs.* Drexel Furniture Co., 259 U. S. 20. See page 58, Chapter V.

brought suit against the officers charged with its enforcement. The United States Supreme Court decided[5] that neither party had a status sufficient to justify a cause of action and did not pass directly upon the constitutionality of the law. Federal subsidies to states, although in operation for a number of years, have been severely criticized of late and have even been characterized as "bribes" and as costly measures which induce undue expenditures on the part of the states. Proponents of such grants believe that the sociological necessity for stimulation of state action overweighs all other arguments advanced by the opponents. According to the present temper of those in control of appropriations, Federal subsidies may have a precarious future. The operations undertaken in accordance with the terms of these various subsidy laws represent, nevertheless, a definite relationship between the Federal and state governments in health matters, and so are described in some detail later in this chapter.[6]

Control Over Interstate Commerce. More important than the taxing power, where national vitality is concerned, is the power granted to Congress by the Constitution to regulate commerce with foreign countries and between the several states. Most of the federal health activity, in fact, is founded on this authority, as contained in the third paragraph of Section 8 of Article I. Under it, Congress has passed laws imposing quarantine, regulating the purity and adulteration of foods, prohibiting the shipment of filled milk, regulating biological products, penalizing interstate transportation of women for immoral purposes, providing for inspection of meat, and controlling narcotics. All of these laws which have been tested in the courts have been upheld as constitutional exercises of the rights of the federal government.[7]

As in the case of taxation, there is a limit beyond which the control of interstate commerce can not go. The first federal child labor law (Act of September 1, 1916; 39 Stat. L., 675) was an endeavor to prohibit the shipment in such commerce of commodities made by child labor, but the United States Supreme Court in

[5] Massachusetts *vs.* Mellon (1923), 262 U. S. 447.

[6] See page 71.

[7] Up to 1925 the "filled milk" and narcotics import laws had not been contested in the courts.

a divided opinion, decided that this law was unconstitutional as an attempt to regulate methods of manufacture within a state. Such manufacture might be, and undoubtedly was, harmful to health, but the transportation of the articles could not be.[8] It was, therefore, a matter for the states to control for themselves.

Power Over Territories and Treaties. Besides the taxing power and the control over commerce, the Federal Government may perform health duties through its supervision of the territories, national reservations, and the District of Columbia. It may, further, concern itself with public health through the treaty-making power, though this last method has not been extensively used in health matters. The national government has, however, legislated extensively, though not always effectively, in behalf of the health of its wards, such as the Indians, natives of Alaska, and inhabitants of the territories and the District of Columbia. It has provided for the government insane and for the health of its soldiers, sailors, and the civil employees of the federal service.

Investigation and Instruction. The conduct of research seems to be acknowledged as a fundamental function of the Federal Government. In fact, collecting and disseminating useful information on appropriate topics is the only duty of many of the Federal bureaus. Others may have regulatory or administrative, or even quasi-judicial duties, as well as investigatory ones. Not until 1878, nevertheless, did Congress authorize any research of importance to the public health. In that year a study of the origin and causes of epidemic diseases, especially yellow fever and cholera was empowered (Act of December 21, 1878; 20 Stat. L., 487), and investigations of diseases of animals were authorized in that and succeeding years (Act of June 20, 1878; 20 Stat. L., 240 and Act of May 29, 1884; 23 Stat. L., 32). Studies in nutrition were provided for in 1894 (Act of August 8, 1894; 27 Stat. L., 264), and a special investigation of leprosy was sanctioned in 1899 (Act of March 2, 1899; 30 Stat. L., 976). In 1901 general authorization for investigations of contagious and infectious diseases was obtained (Act of March 3, 1901; 31 Stat. L., 1137) and a Hygienic Laboratory pro-

[8] See Goodnow, F. J., Constitutional foundation of federal public health functions. Public Health Service, Reprint No. 559 (1919).

vided for the purpose under the Marine Hospital (later the Public Health) Service. There have been many other laws pertaining to research in health matters. Unlike regulatory acts, these laws relating to research impose no restrictions upon the scope of the work, and their extent is limited only by available appropriations.[9]

Federal Recognition of State Health Authority. The ultimate jurisdiction of the states over public health matters has been recognized by Congress and by the federal Judiciary. The first federal enactment relating to public health, passed in 1796 (1 Stat. L., 474), authorized the President to direct revenue officers to aid in the execution of maritime quarantine and the health laws of the states, and similar recognition has been accorded in much subsequent legislation of Congress. Comprehensive amendments to the National Quarantine Act of 1893 (27 Stat. L., 449), made in 1902 (32 Stat. L., 712), authorized the Surgeon General of the Marine Hospital Service to call an annual conference of state and territorial health officers. The act of February 3, 1917 (39 Stat. L., 872), establishing a federal leprosarium, empowered the Public Health Service to receive lepers consigned to it by state health authorities. The act of July 9, 1918 (40 Stat. L., 886), creating a Division of Venereal Diseases in the Public Health Service, authorized that division to coöperate with state departments of health in the prevention and control of venereal diseases within the states. Many other similar instances of recognition of state health authority by the legislative branch of the federal government could be cited, but these are sufficient for the purpose. The attitude of the United States Supreme Court has already been set forth in some detail in the preceding chapter.[10] The decisions of this court are clearly to the effect that the protection and promotion of the public health rests in the first instance with the states, that it will be upheld in every reasonable application of it and that it is subject only to certain proper constitutional limitations, which will be stretched as far as possible in upholding the rights of the states to regulate internal police matters, whether or not they affect life, liberty, and property.

[9] Kerr, J. W., Legal authority for federal public health activities (1925). Public Health Service, Reprint No. 1035.

[10] See page 48.

Limitations on the Police Power. The police power of the states, under the authority of which public health work is carried on, is subject to a number of limitations placed upon it by the Constitution. Many of the clauses of this basic law of the United States may give rise to conflicts between the exercise of the police power and the jurisdiction of federal authorities. As already pointed out, the control of interstate and foreign commerce is exclusively a federal matter. No state may interfere with such commerce, with the notable exception, however, that it may take necessary and reasonable measures in behalf of public health or safety. If such actions clash with the control of interstate commerce, they will usually be upheld by the courts, provided they are actually essential to health and are reasonable and proper in their application.[11]

The same principle holds good with respect to conflicts between the exercise of the police power and other portions of the Constitution which may impose limitations upon it. Thus, no person can be deprived of life, liberty, or property without due process of law, nor can any person be denied the equal protection of the laws. A state can pass no legislation which impairs the obligation of a contract; nor may a state, without the consent of Congress, lay imposts on exports except to execute reasonable inspection laws; nor may a state enter into treaties or compacts with other states, except with the consent of Congress. All of these prohibitions may affect the administration of public health by the states, and apparently would seem to place difficulties and restrictions in the way of efficient exercise of the police power. The courts, however, have always been liberal in upholding the reasonable use of police measures.

When an act which is needed to protect the public health runs counter to the Constitution, the question of whether the interests of public health will prevail depends upon the facts in the particular case, and the controversy may often be determined by the reasonableness of the action in behalf of public health. Courts will uphold the interests of public health, provided they are not exercised in an unreasonable manner and there is no abuse of power and authority. The liberty of the individual citizen must be

[11] See page 50.

maintained, but only so long as society as a whole will not suffer thereby. The legal authority for public health measures is, in fact, based on the maxims, "The greatest good to the greatest number," and "So use your own as not to do harm to others."

Delegation of the Police Power. The police power of the states may be delegated to their political subdivisions. Thus, cities and towns, and other municipal corporations may be empowered by charter or by legislation to regulate and control public health within their own jurisdictions. Although every state has an official state-wide health organization, this delegation has been general, so that most local health administration is controlled by municipalities. The function of the state is, in general, to control intercommunity affairs, to provide standards and guidance, to conduct research, and to enforce the state health laws, which usually set forth in detail the powers and duties of the state and local authorities, respectively.[12]

The federal government, through its appropriate bureaus and officers, may send information and advice to local health authorities and, with their consent, may collect information from them. It may not, however, go into a community for the purpose of taking charge of or directing public health activities, unless interstate or foreign commerce is involved, or unless such coöperation has been directly invited by state authorities.

Organization of State Health Work.[13] Every state has a department charged with the administration of state health activities. This department may consist of a board of health with an executive health officer, or a single commissioner, sometimes with and sometimes without an advisory council. The exact type of organization varies throughout the country, and occasionally public health is administered by a state department of welfare, or

[12] See Kerr, J. W., and Moll, A. A., Organization, powers and duties of health authorities. Public Health Service, Public Health Bulletin No. 54 (1912).

[13] An investigation of state health administration by the Institute for Government Research was being undertaken in 1926. No complete survey of state health organization has been made since 1914, when Dr. C. V. Chapin conducted such a study for the American Medical Association. The United State Public Health Service issues annual directories of state health authorities.

health and welfare.[14] The executive of the department is to-day usually a full-time officer, though five state health officers were employed on a part-time basis in 1924. The department is, as a rule, organized into divisions or bureaus, such as sanitary engineering, vital statistics, child hygiene, food and drugs, etc., each in charge of a chief. The department usually maintains a laboratory and has other necessary equipment, the extent of which depends on the generosity of the legislature.

Appropriations to all the state health departments in 1925 aggregated about $12,000,000, as compared with $11,000,000 in 1924, and $4,500,000 in 1914.[15] The Federal Government in 1925 spent about $15,000,000 on public health activities, though this sum includes over a million dollars which was allotted to the states for maternity and infant hygiene or venereal disease control. The state health appropriations in 1924 varied from the lowest amount of $8800 in Nevada to the highest, $2,000,000, in Pennsylvania. Per capita appropriations vary from three to nineteen cents per year. The amount of money spent on public health by all cities in this country having a population of 30,000 or over was about $28,000,000 in 1922, though this sum represents only about 2½ per cent of all municipal expenditures. About $5,000,000 is spent annually by counties and rural communities for health work.

The total annual amount spent on public health by all official agencies, federal, state, and local, comes to approximately $60,000,000. This is the appropriation for prevention. It costs the states about a hundred million dollars annually to provide institutional care for the sick and the defective. The Federal Government spends three times as much for medical relief as it does for public health. Apart from governmental expenditure, it has been estimated that it costs the people of the United States over one thousand million dollars annually for hospital service, physicians, nurses, and other healers, and another three hundred and fifty millions for drugs.

Actual Relation of the Federal Government to State Health Work. The source of legal authority over public health, the

[14] In Idaho, Nebraska, and New Mexico only.

[15] Moore, H. H., Public health in the United States (1923). This book has an excellent chapter on public economy and public health, in which figures as to relative expenditures are cited.

rôle of the federal government in protecting national vitality, and the functions and organization of the states in health matters, having been set forth, it remains to consider some of the actual instances of the relations between the federal government and the states in the interests of the public health. The operations of the federal government in connection with this relation may be summarized under the following heads, each of which will be briefly described:

1. Collection and distribution of information
2. Coöperation with the states
3. Regulation of interstate commerce
4. Control over foreign commerce
5. Enforcement of Federal taxation

Collection and Distribution of Information. Investigation of various phases of public health is undertaken by practically all of the Federal bureaus which do health work. The nature of this research varies in character, some of it being concerned with empirical scientific investigations; some with the collection, compilation, or analysis of data; and some with studies of administration. Examples of original scientific research in the first class mentioned are the studies on the chemotherapy of syphilis, conducted by the Hygienic Laboratory of the Public Health Service, and the investigations of metabolism made by the Bureau of Home Economics. Collection and analysis of data is exemplified in the studies of infant mortality, made by the Children's Bureau, and the compilation of accident statistics by the Bureau of Labor Statistics. Studies of administration consist of such matters as the surveys of municipal health department procedure, performed by the Public Health Service, or on current pasteurization practice, as ascertained by the Bureau of Dairying. Federal health bureaus which have no regulatory or administrative functions, but are charged only with the collection and dissemination of useful information are: Division of Vital Statistics, Bureau of the Census (Commerce); Bureau of Labor Statistics (Labor); Women's Bureau (Labor); Division of School Hygiene, Bureau of Education (Interior); Bureau of Home Economics (Agriculture); Bureau of Dairying (Agriculture). These bureaus may be, and in several instances are, interested in subjects other than those pertaining to public health.

The results of this assembled data are usually of great value to the states. They are able to look to a central source for authoritative information and guidance, though, as pointed out, the central source is, unfortunately, rather scattered itself. While a state or local officer can get all the health data which has been gathered by the national government by purchasing it from the Superintendent of Documents, he can get it free only by applying to the particular bureau which has produced it, which may be any one of thirty different bureaus. So, too, he may have to write to many federal agencies or, if he visits the Capital, he may have to travel all over the city and confer with many different officers.

All of the various bureaus which make investigations also publish them in pamphlet form. There are, in fact, over one thousand different bulletins on health subjects available. Some of these are technical, while others are more popular. Magazines and journals are also issued by several bureaus,[16] and these often contain articles of health interest. There are apparently no inhibitions on the issuance of pamphlets and publicity material by the federal government except the limit imposed by the amount of appropriations. News items and magazine stories are often distributed and various other measures employed to secure publicity.

Coöperation with the States. Federal activities undertaken under the authority to make investigations may also include the making of demonstrations.[17] Thus, a federal health agency, with the consent of the state, or at its invitation, may, conduct a demonstration in child hygiene, rural hygiene, or some other pertinent subject. Rural sanitation activities, to be participated in jointly by the federal government, states, and counties, and financed from all of these sources, are, in fact, sanctioned by acts of Congress. The International Health Board, an extra-governmental agency sponsored by the Rockefeller Foundation, also assists in this work, which is supervised by the Rural Sanitation Office of the Public Health Service. The number of counties on January 1, 1925, in which health work was being undertaken by whole-time health officers was 280,[18] an increase of fifty over 1923. In 1921 the

[16] A list is given on page 372.

[17] McLaughlin, A. J., Proper relation of federal and state governments in public health work, *American Journal of Public Health*, August, 1919.

[18] Lumsden, L. L., Rural health service in the United States, 1921. Public Health Service, Public Health Reports, May 8, 1925.

number was 161. Only about 14 per cent of the rural population now has such rural health service.

Rural hygiene is undertaken not only by the Public Health Service, but it also receives an impetus from the Extension Service of the Department of Agriculture. Under authority of the Smith-Lever Act (38 Stat. L., 372) and annual appropriation acts, home demonstration agents and county agents are employed in the states with Federal, state, local, and private funds. Much of the instruction given by these agents is concerned with hygiene, sanitation, and other rural health problems.[19]

The Public Health Service has always maintained close relations with the state departments of health. On the theory that improved administration would result from strengthening state health authorities, the Service has done everything in its power to bring this about. It has loaned its officers for temporary duty as state officers, and has endeavored to assist in building up the sanitary engineering bureaus of the states. Such a step is obviously of importance to the interstate control of disease, as it serves to eliminate sources of infection within the states. The development of adequate state and local health machinery is considered one of the most important factors in the prevention of disease.

The work of the Bureau of Mines of the Department of Commerce in attempting to improve the health of miners throughout the country should also be mentioned. This bureau coöperates with the states and also maintains mine rescue cars and equipment, which can be dispatched to the scene of disasters.[20]

The largest single appropriation for coöperative health work in the states is granted under the Sheppard-Towner Act of 1921 (42 Stat. L., 224) for the promotion of the welfare and hygiene of maternity and infancy. This law makes available annually for a five-year period, federal funds to the extent of about a million dollars, to be allotted to those states accepting the act and matching the federal grant. In 1925 all the states except Connecticut, Illinois, Kansas, Maine, and Massachusetts had accepted the law and were conducting child hygiene activities with the coöperation of the Children's Bureau, which is charged by Congress with the

[19] See page 217 for a complete description of this work.
[20] See page 295 for more detailed description.

administration of the act. The Division of Maternity and Infant Hygiene of the Bureau consists of two physicians, as director and associate director, a public health nurse, an accountant, a secretary, and a stenographer, and members of this staff visit, at least once a year, all of the coöperating states. The actual work done by the states has been summarized in a report[21] issued by the Bureau. According to this report, "as a successful federal aid measure the act has already demonstrated its value in that it has

(1) Stimulated state activities in maternal and infant hygiene.
(2) Maintained the principle of local initiative and responsibility.
(3) Improved the quality of the work being done for mothers and babies by disseminating through a central source—the federal government—the results of scientific research and methods of work which have been found to operate successfully.
(4) Increased state appropriations with the passage of the act."

The continued activities along these lines are largely educational and consist of instruction to mothers in prenatal care, childbirth, and infant care; and in the development of more wide-spread medical and nursing facilities so that adequate maternity and infancy supervision will be available.

Regulation of Interstate Commerce. The prevention of the interstate spread of disease is a matter largely entrusted by law to the Public Health Service. The Service acts, however, only when state and local measures are inadequate, as when a distinctly national problem is involved. It has promulgated regulations for the sanitation of interstate carriers, such as railroads and vessels. It also controls all biological products shipped in interstate commerce, and to this end tests them and licenses their manufacture. The Service also conducts various other activities affecting interstate commerce. Its efforts to improve state health administration have already been mentioned.[22]

Two other interstate matters of significance to health are administered by the Department of Agriculture. These are the Pure Food and Drugs Act and the Meat Inspection Act. The analytical

[21] The Promotion of the welfare and hygiene of maternity and infancy (Report for Fiscal Year 1924). Publication No. 146.
[22] See page 72.

work under the Food and Drugs Act of 1906 (34 Stat. L., 768) is performed by the Bureau of Chemistry,[23] preliminary to any legal measures for prosecuting offenders in the federal courts. Most of the states also have their own pure food laws and the Bureau, of course, has no jurisdiction over intrastate matters. It attempts, however, to work in harmony with state officers, and to this end maintains an office of coöperation. The Meat Inspection Act of the same year (34 Stat. L., 679), which forbids the shipment of meat in interstate commerce unless inspected and approved by Federal agents, is administered by the Bureau of Animal Industry,[24] which has a corps of over two thousand inspectors for the purpose, many of these employees working directly in the great meat packing establishments of the country.

Control over Foreign Commerce and Taxation. The control exercised by the Federal Government over foreign intercourse, as by examinations of immigrants, quarantines, collection of useful information concerning foreign sanitary conditions, and by other appropriate measures; and the enforcement of federal taxation, are matters which only indirectly concern the relationship of the federal government to the states, and as they have been described and discussed elsewhere,[25] will not be touched upon again in detail. Control of foreign matters affecting health is largely exercised by the Public Health Service, though the Consular Service and the Customs Service have certain duties. Collection of taxes and enforcement of regulatory provisions connected with such taxation is administered by the Bureau of Internal Revenue.

[23] See page 187.
[24] See page 198.
[25] See page 69.

PART II

DESCRIPTION AND ANALYSIS OF EXISTING FEDERAL HEALTH ACTIVITIES

CHAPTER VII

THE DEPARTMENT OF THE TREASURY

The Department of the Treasury now contains the chief federal health agency, the Public Health Service. This bureau belongs to this department for historical and not fiscal reasons. Although there is an axiom among sanitarians that "public health is purchasable," administrative control over the Public Health Service by the Secretary of the Treasury has never resulted in lavish expenditures for the purposes of the bureau. Although general supervision over the Public Health Service is exercised by the Secretary, an Assistant Secretary is more directly in charge. This officer also supervises the work of a number of other non-fiscal agencies in this department, such as the Supervising Architects' Office.

Two other bureaus of the Treasury Department are indirectly interested in public health. They are the Bureau of Internal Revenue, which administers the narcotic and prohibition laws, and the Customs Service, which coöperates in enforcing certain food and drugs laws.

The Public Health Service.[1] The Public Health Service is the chief federal health agency. It is, in fact, the only bureau whose sole concern is in the field of public health and medicine, though there are a half a dozen other bureaus which have a major interest in the subject of public health.

[1] The material regarding the Public Health Service is drawn largely from Schmeckebier, The Public Health Service. Institute for Government Research, Monograph No. 10, where further details will be found.

The functions of the Public Health Service as now determined by law, fall into three classes: (1) The furnishing of medical relief for designated persons; (2) the prevention of the spread of disease through interstate and foreign commerce, this duty involving coöperation with state authorities; and (3) the conduct of research. In order to perform these functions, the following general activities are undertaken: The operation of hospitals and the supplying of medical relief to specified beneficiaries; the medical inspection of immigrants; the administration of maritime and border quarantine; the prevention of the interstate spread of disease; coöperation with state and local health authorities; the examination of biological products intended for shipment in interstate commerce; the collection of morbidity and other statistics pertaining to health; the study and investigation of the diseases of man and all conditions which influence health and national vitality; and the dissemination of information on public health.

The Public Health Service is one of the oldest of the government services, its origin going back over a century and a quarter. It has always been connected with the Treasury Department. The history of the Service may be divided into four well defined periods, as follows: (1) The unorganized Marine Hospital Service from 1798 to 1870; (2) the organized Marine Hospital Service from 1870 to 1902; (3) the Public Health and Marine Hospital Service from 1902 to 1912; and (4) the Public Health Service from 1912 to date.

The Unorganized Marine Hospital Service, 1798 to 1870. The furnishing of medical relief to merchant seamen was one of the earliest of the Federal activities that did not relate to the actual operation of the government. The act of July 16, 1798 (1 Stat. L., 605), provided that after September 1, 1798, the master of every American ship arriving from a foreign port should pay to the collector of customs the sum of twenty cents a month for each seaman, which amount he was authorized to deduct from the seaman's wages. After September 1, 1798, vessels engaged in coastwise trade could not obtain a new license until payment had been made at the rate of twenty cents a month per seaman for the period covered by the previous license. The President was authorized to use the money collected in this manner to provide temporary relief and maintenance for sick and disabled seamen, who were

to be placed in hospitals already established; if no hospital was available, provision for relief was to be made in such manner as the President should direct. Special provision was made that the money was to be expended in the district where collected.

The President was also authorized to accept cessions of buildings and grounds, and donations. The surplus after paying expenses could be used to purchase buildings or grounds and to erect buildings. The President was authorized to appoint directors of the marine hospitals of the United States in various ports at his discretion, who were to hold office during his pleasure. Each director was to supervise the expenditures in the port to which he was assigned, to provide accommodations and govern the hospital under general instructions of the President, and to render an account quarterly to the Secretary of the Treasury or to some other person designated by the President. The directors were to receive no compensation except such as might be incurred in the actual discharge of their duties. The collectors of customs appear to have become directors ex officio.[2]

The act of 1798 referred only to merchant seamen, but on March 2, 1799 (1 Stat. L., 729), a new act was passed authorizing the Secretary of the Navy to deduct twenty cents a month from the pay of naval officers, seamen and marines, who were made beneficiaries of the marine hospitals. These deductions were transmitted quarterly to the Secretary of the Treasury. This act remained in force until the passage of the act of February 26, 1811 (2 Stat. L., 650), which placed naval hospitals under the superintendence of the Secretary of the Navy and provided that the collection from officers and seamen of the Navy should be paid into a separate fund for the Navy.

It was soon recognized that proper relief could not be given by expending the money entirely within the district in which it was collected, and the act of March 2, 1799 (1 Stat. L., 729), authorized the President to expend the fund within a state adjoining the one in which the money was collected, with the exception of New Hampshire, Massachusetts, Rhode Island, and Connecticut. All money collected in these four states was required to be expended within their borders. Three years later these limitations on the

[2] 31 Cong. 2 sess., S. ex. doc. 14, p. 5.

expenditures were abolished, and the fund was made a general one to be used throughout the country for the benefit of sick and disabled American seamen.

The first marine hospital operated by the government was the one at Washington Point, Norfolk, purchased in 1800. By 1802 hospitals had been opened at Norfolk, Boston, Newport, and Charleston.[3] The increasing use of the Mississippi River for transporting to market the lumber and other products of the Western territory made it desirable to provide hospital facilities at New Orleans, and the act of May 3, 1802 (2 Stat. L., 192), authorized the President "to take such measures as may be expedient" to provide medical assistance at that place if this could be done "with the consent of the government having jurisdiction over the port." At this time France still had possession of the Louisiana Territory, as the treaty ceding this area was not signed until the following year. The master of every boat or raft going down the Mississippi River was required to pay twenty cents per month for each person employed. The hospital tax was collected at Fort Adams, and no vessel or raft was to be cleared until the tax was paid. An appropriation of $3000 was made for establishing the hospital, and the President was authorized to appoint a director of the marine hospital at New Orleans, whose duties were to be the same as those of directors of marine hospitals in the United States. The act of February 24, 1804 (2 Stat. L., 252), extended the laws relating to sick and disabled seamen to the territory acquired from France.

The act of May 3, 1802, also provided $15,000 for the erection of a hospital in Massachusetts, authorized the admission of foreign seamen to hospitals at the rate of seventy-five cents a day, and allowed the directors of hospitals a commission of one per cent on the money expended.

The settlement of the Northwest and Louisiana territories and the development of transportation facilities on the Great Lakes and Western rivers brought to the attention of Congress the necessity of establishing hospitals in that region. By the act of March 3, 1837 (5 Stat. L., 189), the President was authorized to purchase sites for not exceeding three hospitals on the Mississippi River,

[3] Supervising Surgeon General, Marine Hospital Service, Annual Report, 1872, p. 7.

three on the Ohio, and one on Lake Erie. An appropriation of $15,000 was made for the purchase of sites, and the President was authorized to call upon the "medical men" of the Army to select suitable locations. The Secretary of War was directed to prepare plans and estimates, which were submitted to Congress in December, 1837.[4] Later acts provided funds for the erection of these Western hospitals, which were built under the direction of the Topographical Bureau of the War Department.[5]

New hospitals were built at various times, but no important legislation affecting the service was enacted between 1837 and 1870. The act of March 1, 1843 (5 Stat. L., 602), provided that seamen engaged in the coasting trade should be beneficiaries of the service. These seamen were entitled to this service under the original act of July 16, 1798, but for "some cause not apparent the provisions of the act of July 16, 1798, including coasting vessels under the general law, had been suspended, by construction, since the year 1831."[6] By the act of July 20, 1846 (9 Stat. L., 38), canal boats were exempted from the tax, and the persons employed on them were denied the use of the hospitals. The act of March 3, 1849 (9 Stat. L., 368), carried an appropriation of $1000 to collect facts and information in relation to marine hospitals and the marine hospital fund and to report to Congress what changes were necessary. Dr. George B. Loring and Dr. T. O. Edwards were appointed to collect the necessary information; and their report, made in 1851, reviewed the general history of the service, described existing conditions, and made some recommendations, the most important being that the system should be placed under a chief surgeon.[7] Secretary of the Treasury Chase in 1861 stated that the number of marine hospitals "has been increased far beyond necessity or utility."[8] Subsequently the act of March 1, 1862 (12 Stat. L., 348), authorized the Secretary of the Treasury to rent marine hospitals to authorities of cities and to contract with hospitals for the medical treatment of seamen. By the act of April 20, 1866 (14 Stat. L., 40), the Secretary of the Treasury was authorized to sell or lease

[4] Secretary of War, Annual Report, 1837, pp. 195-203.
[5] 31 Cong. 2 sess., S. ex. doc. 14, p. 25.
[6] *Ibid.*, p. 3.
[7] *Ibid.*, p. 30.
[8] Secretary of the Treasury, Annual Report, 1861, p. 27.

such marine hospital lands and buildings as he deemed advisable, except the hospitals at Portland, Maine, and Cleveland, Ohio; no hospital was to be sold or leased if suitable accommodations could not be obtained. This act was amended by the act of June 27, 1866 (14 Stat. L., 76), which provided that no hospital should be sold or leased if the relief furnished amounted to twenty cases a day.

The tax on seamen was collected continuously from 1798 to 1870, except for the period of one year beginning April 1, 1837. The proceeds of the tax, however, were sufficient for the expenses of the service during only thirty-four of the seventy-three years. During the other years it was necessary to appropriate money from the general funds of the government in order to maintain the service, and from 1841 to 1870 deficiency appropriations were made each year with the exception of 1846 and 1854. In addition, specific appropriations were made for the purchase of sites and the erection of buildings.

During this period medical relief was given in the hospitals operated by the Service, in contract hospitals, and in private dwellings under contract with local physicians. Thirty-one hospital projects had been undertaken by the government since the organization of the Service, but only nine of these were in use in 1870, seven being operated by the government and two being leased to private parties. Of the remainder, fourteen hospitals had been sold, one transferred to the War Department, one abandoned, one burned, one destroyed by flood and one by hurricane, one injured by earthquake and abandoned, and two unfinished, the completion of one of these being regarded as impracticable. Hospitals had been built at points where there were no patients or not sufficient patients to justify the maintenance of the institutions.

On the administrative side, the service during these years was characterized by an entire absence of any central supervisory authority. The act of 1798 placed all authority in the President, who seems to have delegated control to the Secretary of the Treasury,[9] who had no supervisory machinery, the routine transactions being, at the end of this period, under the Revenue Marine Division of the Treasury Department.[10] At first the President

[9] 31 Cong. 2 sess., S. ex. doc. 14, p. 5.
[10] Sup. Surg. Gen., Annual Report, 1872, p. 26.

appointed the surgeons in charge of hospitals, but these appointments afterwards became a perquisite of the collectors of customs. In 1809 Secretary Gallatin authorized the collectors of customs to fix all rules for government of hospitals. Secretary Walker in 1848 prescribed general rules for the government of all hospitals, but they do not seem to have been followed.[11] In the absence of adequate supervisory authority each hospital was managed as an independent establishment.

The Organized Marine Hospital Service, 1870 to 1902. Realizing the unorganized condition of this hospital service, Congress on June 29, 1870 (16 Stat. L., 169), passed a law which provided a central administrative agency for the Marine Hospital Service. The Secretary of the Treasury was authorized to appoint a supervising surgeon for the Service at a salary of $2000 and necessary traveling expenses. The duties of this officer as stated in the law were, under the direction of the Secretary of the Treasury, to supervise " all matters connected with the Marine Hospital Service, and with the disbursement of the fund for the relief of sick and disabled seamen." In the same act the hospital tax on seamen was increased from twenty to forty cents a month. The proceeds of the tax were to be placed in a separate fund, which was appropriated for the expenses of the Marine Hospital Service, and which was to be " employed under the direction of the Secretary of the Treasury, for the care and relief of sick and disabled seamen employed in registered, enrolled, and licensed vessels of the United States."

The office of Supervising Surgeon was first filled in April, 1871, by the appointment of Dr. John M. Woodworth, who promptly took steps to reorganize the service on a more efficient basis. The rules governing the service were gradually revised, and the new rules were codified in regulations approved October 1, 1873. Under the new regulations, appointments were made to the general service, and not to particular hospitals or stations, the surgeons being transferred from the smaller to the more important stations as vacancies occurred. This feature emphasized the national character of the service, prevented appointments due to local political influence, and gave the general service the benefit of the experience

[11] 31 Cong. 2 sess., S. ex. doc. 14, p. 27.

acquired by its officers. More important was the requirement that appointments to the medical staff should be made only after examination by a board of surgeons, the appointment being made by the Secretary of the Treasury on the recommendation of the Supervising Surgeon.[12] Compensation of all officers and employees was fixed by the Secretary of the Treasury, with the exception of the salary of the Supervising Surgeon which was fixed by statute.

Supervising Surgeon Woodworth had been a medical officer of the Army, and evidently believing that a military plan of organization gave the best results, he placed the service on what was practically a military basis. Officers were required to wear a regulation uniform when on duty, and the general discipline and administration of the hospitals were modeled on military lines. In their basic features these regulations are in force at the present time, although modifications have been made in details as a result of the creation of additional grades of officers and changed conditions.

The first annual report of the reorganized service was that for 1872, which reflected the change in general character. The earlier reports contained only statements of receipts and expenditures, while the report for 1872 included detailed medical statistics on cases treated and brief reports on the history of surgical cases. In the report for 1873 was begun the publication of more detailed technical and scientific papers dealing with cases of special interest. These papers continued to be published in the annual reports until 1905, after which articles of this character were issued in separate form.

The next legislation affecting the service was contained in the sundry civil appropriation act of March 3, 1875 (18 Stat. L., 377), in which the head of the service was called the Supervising Surgeon General, and which provided that he should be appointed by the President, subject to confirmation by the Senate. The salary of the office was fixed at $4000 a year. No change was made in the method of appointing other officers and they continued to be appointed by the Secretary of the Treasury, who also fixed their compensation. By another act (18 Stat. L., 485) some changes were made in the method of collecting the tax, and the term "seamen," previously undefined, was made to include all persons em-

[12] Regulations, 1879, Par. 51 and 52.

ployed on vessels, in so far as the benefits of the service were concerned. Foreign seamen were allowed to obtain treatment at the hospitals at rates to be fixed by the Secretary of the Treasury, instead of at the rate of seventy-five cents a day prescribed by the act of May 3, 1802. Seamen on vessels not subject to the hospital tax were to be admitted on the same terms as foreign seamen, and under this provision persons employed on vessels of the Navy, Engineer Corps of the Army, Coast Survey, and Lighthouse Service [13] were given treatment, the expenses being paid by the various services. This law provided also that insane patients of the Service should be admitted to the Government Hosiptal for the Insane, now St. Elizabeth's Hospital, and that the Secretary of the Treasury might lease hospital buildings and use the proceeds for the maintenance of the Service.

Quarantine Law of 1878. The first national quarantine law was the act of April 29, 1878 (20 Stat. L., 37), and the medical officers of the Marine Hospital Service were charged with the enforcement of regulations to be promulgated by the Secretary of the Treasury. Congress had passed quarantine laws in 1796, 1799, 1832, and 1866, but these earlier laws merely extended Federal aid in the enforcement of local regulations. By the act of May 27, 1796 (1 Stat. L., 474), the President was authorized to direct revenue officers and officers commanding forts and revenue cutters to aid in the execution of health laws of the states in such manner as may appear necessary. This law was repealed by the act of February 25, 1799 (1 Stat. L., 619), which provided that any quarantine established by or in conformity with the health laws of any state should be observed by collectors of customs and all other officers of the revenue, by masters of revenue cutters, and by military officers as directed by the Secretary of the Treasury. The act of July 13, 1832 (4 Stat. L., 577), gave the Secretary of the Treasury authority for one year to employ additional boats and officers if he deemed the revenue cutters and officers insufficient to enforce the quarantine regulations. By the joint resolution of May 26, 1866 (14 Stat. L., 357), the Secretary of the Treasury was directed to make quarantine regulations necessary to aid state or municipal authorities in guarding against the introduction of

[13] Sup. Surg. Gen., Annual Report, 1875, p. 6.

cholera. He was also authorized to direct revenue officers and commanders of revenue cutters to assist in the execution of the quarantine and health laws of the states.

An epidemic of cholera in 1872 focused attention on the subject of quarantine, and the Secretary of the Treasury on September 8, 1874, issued a general circular calling attention to the act of February 25, 1799 (R. S. 4792), which for some years had been practically a dead letter. In this circular, officers of the Marine Hospital Service and customs officers were directed to inform themselves fully regarding local health laws and regulations, and directed to give prompt assistance in their enforcement.[14]

All the laws discussed above assumed that quarantine was a local function and that any action of the National Government should be merely for the purpose of assisting state or municipal authorities. The diversity in the regulations and the burden thrown upon foreign commerce by the unreasonable requirements at some ports led to the passage of the act of April 29, 1878 (20 Stat. L., 37), which gave authority to the Supervising Surgeon General of the Marine Hospital Service, subject to the approval of the President, to make rules and regulations governing the detention of vessels having cases of contagious diseases on board or coming from foreign ports at which contagious diseases exist. It was expressly stipulated, however, that these rules and regulations must not "conflict with or impair any sanitary or quarantine laws or regulations of any state or municipal authorities." The Attorney General gave it as his opinion that this law authorized Federal regulations more stringent than local ones.[15]

Officers of existing state or municipal quarantine systems were authorized to act as officers of the national quarantine system, and if the quarantine was considered necessary at other ports, the medical officers of the Marine Hospital Service were directed to perform such duties as might be assigned to them by the Supervising Surgeon General.

This act provided also that consular officers in foreign countries should advise the Supervising Surgeon General regarding the appearance of contagious diseases in any foreign port or the depar-

[14] *Ibid.*, p. 16.
[15] 20 Op. Att. Gen. 474.

ture of any vessel from such a port for the United States. They were also required to report the departure of vessels from such ports to the health officer at the port of destination. In addition consular officers were required to make weekly reports to the Supervising Surgeon General on the sanitary conditions at the ports where they were stationed. The Supervising Surgeon General was required to notify the local authorities at the port of destination regarding the departure of any vessel from an infected port; he was also required to prepare and transmit to the medical officers of the Marine Hospital Service, to collectors of customs, and to state and municipal health authorities in the United States, weekly abstracts of the sanitary reports received from consular officers, as well as other pertinent information. The act of March 3, 1879 (20 Stat. L., 402), authorized the expenditure of $5000 from the permanent appropriations of the Marine Hospital Service, for the expense of collecting data for health bulletins.

The provision for the distribution of the weekly abstracts of sanitary reports, contained in the act of April 29, 1878, was the first authority for the publication of the series now known as Public Health Reports. The first number, issued under the title "Bulletin of the Public Health," appeared July 13, 1878.

Dr. J. M. Woodworth, the first Supervising Surgeon General of the Service, died on March 14, 1879, and was succeeded by Dr. J. B. Hamilton.

National Board of Health, 1879. The duties and powers relative to quarantine, reports from consular officers, and the distribution of health bulletins conferred on the Marine Hospital Service by the act of April 29, 1878, remained in force only until June 2, 1879, when a law was passed (21 Stat. L., 5) transferring these functions to the National Board of Health which had been created by the act of March 3, 1879 (20 Stat. L., 484).[18] The act of June 2, 1879, which repealed the portions of the act of April 29, 1878, relating to the quarantine and public health functions of Marine Hospital Service, provided that "this act shall not continue in force for a longer period than four years from its date of approval." At the expiration of the four years the repealed sections of the act of April 29, 1878, were revived by the expiration of the repealing

[18] See pages 33-39.

statute.[17] The duties of the Marine Hospital Service in relation to quarantine were thus again in effect after June 2, 1883.

Personnel System of 1879. The methods of appointment and promotion of the commissioned personnel of the Service were further defined by the regulations approved November 10, 1879, which in their basic features are in force at the present time, although some modifications have been made in the details. The regulations of 1873 had provided that appointments should be made only after passing a technical examination before a board of officers. The regulations of 1879 continued this provision, but in addition specified that original appointments should be made to the lowest grade only—that of assistant surgeon—and fixed the age limits between 21 and 30 years of age.[18]

A new grade—that of passed assistant surgeon—was established, and it was provided that after three years' service an assistant surgeon should be promoted to the grade of passed assistant surgeon provided he passed a satisfactory examination. Vacancies in the grade of surgeon were to be filled by promotion of passed assistant surgeons in order of seniority, but promotion was made only after the officer had passed an additional examination.[19]

Development of the Service, 1883 to 1889. After the control of quarantine was restored to the Marine Hospital Service on June 2, 1883, sanitary inspectors were stationed at Havana, Vera Cruz, London, and Liverpool, in order to give notification of the sailing of vessels likely to carry infected passengers or commodities. Havana and Vera Cruz were important centers of yellow fever infection, while London and Liverpool were selected principally by reason of the fear of disease being carried by vessels transporting rags and other similar commodities which were shipped from places where cholera was prevalent and trans-shipped through English ports.[20]

Until 1884 the expenses of the Service had been paid from the permanent indefinite appropriation derived from the proceeds of the hospital tax on seamen, supplemented by specific appropriations. The act of June 26, 1884 (23 Stat. L., 57), which took effect

[17] 20 Op. Att. Gen., 467.
[18] Regulations, 1879, Par. 24-26.
[19] *Ibid.*, Par. 30-32.
[20] Sup. Surg. Gen., Annual Report, 1883, p. 52.

July 1, 1884, repealed all acts levying a hospital tax and provided that the expenses of the Marine Hospital Service should be paid from the proceeds of the tonnage tax imposed on vessels from foreign ports entering the United States. The receipts from these duties on tonnage were made a permanent indefinite appropriation for the use of the Marine Hospital Service. In some years the proceeds of this tax were insufficient to support the Service, and deficiency appropriations were made. The act of June 26, 1884, made no changes in the organization or activities of the Service.

As a result of the growth of the Service a small laboratory for the manufacture of some preparations had been maintained in Washington as a part of the purveying depot, but no provision was made for systematic laboratory investigations in the field of hygiene until August, 1887, when a bacteriological laboratory was established at the Marine Hospital at New York.[21] This laboratory was maintained at New York until 1891, when it was moved to Washington. In 1887 the Service resumed the publication of the Weekly Abstract of Sanitary Reports, which had been discontinued in 1879 when quarantine control was vested in the National Board of Health.

The act of August 1, 1888 (25 Stat. L., 355), prescribed specific penalties for trespassing on quarantine reservations as well as penalties for masters or pilots of vessels who might enter any port in violation of the act of April 28, 1878. This law also provided for the establishment of national quarantine stations under the Marine Hospital Service at the mouths of Delaware and Chesapeake bays, on the Georgia Coast, and at Key West, San Diego, and Port Townsend.

The Secretaries of the Treasury and the Supervising Surgeons General had repeatedly recommended that the rules of the Service requiring examination prior to appointment be given the force of law, but not until 1889 did Congress pass a law on this subject. The act of January 4, 1889 (25 Stat. L., 639), provided that all medical officers of the Service should be appointed by the President, subject to confirmation by the Senate. Prior to this act only the Supervising Surgeon General was appointed by the President. This act provided also that original appointments could be made only to

[21] *Ibid.*, 1888, p. 11.

the rank of assistant surgeon and after an examination before a board of medical officers of the Service in accordance with rules prepared by the Supervising Surgeon General and approved by the Secretary of the Treasury and the President. It provided that an assistant surgeon could be promoted to the grade of passed assistant surgeon after four years' service and after passing a satisfactory examination. An examination was required also in the case of passed assistant surgeons promoted to the rank of surgeon. The President was authorized to nominate all officers already in the Service.

The requirements of this act were embodied in the general regulations approved May 20, 1889, which provided also that the Supervising Surgeon General should be selected from the surgeons in the Service.[22] These regulations fixed the compensation of surgeons at $2500, passed assistant surgeons at $1800, and assistant surgeons at $1600. Longevity pay at the rate of 10 per cent of the annual salary for each five years' service was allowed to medical officers above the rank of assistant surgeon, with the limitation that the total longevity pay should not exceed 40 per cent. The beginning of a retirement system was evidenced by the provision that officers on "waiting orders" for more than two months should receive 75 per cent of the pay of their rank, but there was no method prescribed for placing officers under "waiting orders."[23]

Interstate Control of Diseases, 1890. The first effective measure in the direction of interstate control of disease was the act of March 27, 1890 (26 Stat. L., 31), which provided that whenever he deemed it necessary the President was authorized to cause the Secretary of the Treasury to promulgate necessary rules and regulations to prevent the spread of cholera, yellow fever, smallpox, and plague from one state or territory into another. These regulations were to be prepared by the Supervising Surgeon General of the Marine Hospital Service, and the Secretary of the Treasury was authorized to employ such inspectors as might be necessary to enforce the regulations.

Violation of the regulations made in accordance with this act was made a misdemeanor, punishable by fine or imprisonment. It

[22] Regulations, 1889, Par. 1.
[23] *Ibid.*, Par. 24.

should be noted that this act does not confer general interstate quarantine authority, the diseases for which quarantine might be declared being cholera, yellow fever, smallpox, and plague.

Medical Inspection of Immigrants, 1890 and 1891. The medical inspection of immigrants was added to the duties of the Service in the early part of 1890, when this work at New York was made one of its duties, although legislation placing the medical inspection of immigrants at all ports under the control of the Service was not passed until March 3, 1891. The first act placing restrictions on the admission of defectives was the law of August 3, 1882 (22 Stat. L., 214), which prohibited the landing of a "lunatic, idiot, or any person unable to take charge of himself or herself without becoming a public charge." As in earlier legislation relating to quarantine, Congress looked to state organizations to furnish the machinery for the administration of the law. The Secretary of the Treasury was charged with the duty of executing the provisions of the act, and "for that purpose" he was given "power to enter into contracts with such state commission, board, or officers as may be designated for that purpose by the governor of any state to take charge of the local affairs of immigration in the ports within said state." These boards examined the immigrants, and collectors of customs were required to refuse admission to any immigrants whose entry was prohibited by the law. The Treasury Department was apparently unable to make general provision for the medical inspection of immigrants, as this work appears to have been carried on at New York only.[24] In April, 1890, the contract with the Board of State "Emigration" Commissioners at New York was abrogated, and the Treasury Department undertook the inspection of immigrants at the port, the medical inspection being assigned to the Marine Hospital Service.[25]

More specific provisions for the control of immigration and the medical inspection of immigrants were contained in the act of March 3, 1891 (26 Stat. L., 1084), which took effect April 1, 1891. This law prohibited the admission, among others, of "idiots, insane persons, . . . persons likely to become a public charge, [and] persons suffering from a loathsome or a dangerous contagious

[24] Sup. Surg. Gen., Annual Report, 1890, p. 62; Secretary of the Treasury, Annual Report, 1890, p. lxxiv.
[25] *Ibid.*, p. 55.

disease."[26] It was provided that medical examinations were to be made by surgeons of the Marine Hospital Service, but if the services of a surgeon of the Service could not be obtained without unreasonable delay the inspector could cause the examination to be made by a civil surgeon whose compensation was to be fixed by the Secretary of the Treasury. Medical officers were immediately detailed for inspection of immigrants at the more important ports; at other places the regular officer on duty at the station was available for this service. The inspection work at New York was made by a civil surgeon appointed by the Secretary of the Treasury, as the technical point was raised that the term "surgeon" in the act of March 3, 1891, meant an officer with the rank of surgeon. The Treasury Department maintained that the word surgeon was used in a general sense and meant any surgeon of the Service. The district court, however, sustained the point raised, and as there were not sufficient officers of the grade of surgeon available, it was necessary to suspend the inspection work at that port.[27] This technical objection appears not to have been raised at other ports, and the New York decision apparently was not used elsewhere to question the authority of the examining surgeons. This situation was remedied by Section 8 of the act of March 3, 1893 (*27* Stat. L., 570), which provided that medical examinations might be made by any medical officer of the Marine Hospital Service detailed by the Secretary of the Treasury.

On June 1, 1891, Dr. J. B. Hamilton resigned as Supervising Surgeon General and was succeeded by Dr. Walter Wyman. In this year the Bacteriological Laboratory was moved from New York to the Washington headquarters, which had just previously been moved to the Butler Building at New Jersey Avenue and C St. S. E.

Quarantine Law of 1893. The necessity of an extension of the powers of the national government in preventing the introduction of contagious diseases into the country and their spread from one state to another resulted in the passage of the act of February 15, 1893 (*27* Stat. L., 449), which is still in force and which gives authority for all existing domestic and maritime regulations. While

[26] See also Chapter IX, page 264 on the Bureau of Immigration.
[27] Sup. Sur. Gen., Annual Report, 1891, p. 18.

this act did not undertake to prohibit states or municipalities from maintaining quarantine stations, it provided that state officers might surrender local stations to the Secretary of the Treasury, who was authorized to receive and pay for them if he considered them necessary to the United States. It would probably have been impossible to pass a law prohibiting states from maintaining quarantine stations, and the best results were thus obtained by allowing the states to surrender their quarantine functions from time to time as they realized the advantages of the national system. Gradually the local stations have been surrendered by the states, the last one—at New York—having been acquired in 1921. While the act authorizes the Secretary of the Treasury to pay for the state quarantine stations, this portion of the law is practically of no effect, as he cannot disburse money for this purpose without a specific appropriation by Congress.

This law places upon the Supervising Surgeon General of the Marine Hospital Service the performance of all duties relating to quarantine and quarantine regulations. That officer is specifically directed to examine the quarantine regulations of all state and municipal boards of health, and to coöperate with and aid the local boards in the enforcement of the regulations. If there are no regulations, or if the local regulations are insufficient, the Secretary of the Treasury is authorized to make additional regulations, which must operate uniformly and in no manner discriminate against any port or place. For the first time provision is made for quarantine regulations to prevent the introduction of contagious diseases other than cholera, yellow fever, smallpox, and plague, from one state or territory or the District of Columbia into another state or territory or the District of Columbia. The rules and regulations for both national and interstate quarantine promulgated by the Secretary of the Treasury are to be enforced by the sanitary authorities of states and municipalities if these officers will undertake this duty, but if the local authorities fail or refuse to enforce the regulations the President is authorized to "execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction and spread of such diseases, and may detail or appoint officers for that purpose."

This law provides also that vessels clearing from a foreign port or for any port in the United States must obtain a bill of health

from a consular officer or from a medical officer detailed for that purpose. The Secretary of the Treasury is authorized to make rules and regulations that must be observed by vessels sailing from a foreign port to the United States.

Authority is given for the detail of medical officers to consulates for the purpose of furnishing information and giving bills of health. Consular officers at places to be designated by the Secretary of the Treasury are required to make weekly reports of sanitary conditions. The Secretary of the Treasury is also directed to obtain weekly reports of the sanitary condition of ports and places within the United States, and to publish weekly abstracts of the consular sanitary reports and other pertinent information. Provision is also made that the Secretary of the Treasury shall "by means of the voluntary coöperation of state and municipal authorities, of public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health."

In order to furnish full protection against the introduction of contagious diseases the President was given authority "to prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate and for such period of time as he may deem necessary."

Regulations of 1897. In 1897 the regulations of the service were again revised, and provision was made for increasing the efficiency of the Service by dropping assistant surgeons who were unable to pass the examination for promotion. These rules provided that an assistant surgeon failing in his first examination should be given a second one at the end of the year; if he again failed to pass, it was further provided that he be reported to the Secretary of the Treasury as "not qualified for promotion" and "be requested by the Secretary of the Treasury to tender his resignation." A passed assistant surgeon failing in two examinations was to be placed in the register as "not in line of promotion." These regulations also provided for a retirement system for commissioned officers by placing them under "waiting orders." An officer reported to be unfit to perform his duties by reason of disease, injury, or age could be ordered before a board of officers for examination. If his disability was incurred in line of duty, the board was authorized to

recommend that he be placed on waiting orders or given special duties of a light character. The pay of an officer placed on waiting orders was fixed at 75 per cent of the salary of his grade. These regulations likewise provided that acting assistant surgeons receiving more than $300 a year should be appointed only after passing an examination prescribed by the Civil Service Commission. Previously these officers had been appointed by the Secretary of the Treasury on the recommendation of the Supervising Surgeon General.[28]

Growth of the Service, 1898 to 1901. The Spanish-American War in 1898 presented grave problems to the quarantine division because troops were being moved to and from an area which was badly infected with yellow fever. In coöperation with the War Department the Marine Hospital Service assumed charge of the sanitation on transports, and later when the troops were returned to the United States, a national quarantine station under the direction of an officer of the Marine Hospital Service was established at Montauk Point at the request of the Secretary of War.

At the conclusion of hostilities the quarantine laws of the United States were extended to Cuba and Porto Rico by the executive order of January 17, 1899.[29] Medical officers of the Marine Hospital Service were immediately detailed to these islands, and quarantine service was organized at the principal ports.

The inspection of immigrants at foreign ports was commenced in 1899, when an assistant surgeon was sent to Naples for this purpose. This officer was detailed under the authority of the quarantine act of February 15, 1893, and he had definite authority only to issue bills of health and to require the sanitary measures specified by the regulations. He was, however, instructed to note, for the benefit of the immigration service, any physical infirmities or defects which might prevent the entry of the immigrant. There was no authority to prevent the embarkation of passengers who were not suffering from a communicable disease, but the transportation of defectives was generally prevented by calling the attention of the steamboat company to the fact that the passenger would probably be refused admission under the immigration laws. This

[28] Regulations, 1897, Par. 17-52.
[29] Sup. Surg. Gen., Annual Report, 1899, p. 468.

plan worked well, although many persons who failed to pass inspection at Naples, went to French ports and embarked for Canada.[30]

For some time the treatment of leprosy and the segregation of persons afflicted with this disease had been attracting considerable attention, and on March 2, 1899, Congress passed an act (30 Stat. L., 976) directing the Supervising Surgeon General of the Marine Hospital Service to appoint a commission of medical officers of the Service to investigate the origin and prevalence of leprosy and to report on the legislation necessary to prevent the spread of the disease. The expenditure of $5000 was authorized for this work, to be paid from the appropriation for preventing the spread of epidemic diseases. This commission submitted its report in 1902, and recommended the establishment of a national leprosarium.[31] Provision for a national home for lepers was not made until February 3, 1917 (39 Stat. L., 872), and the institution was not opened until 1920.

For several years the Service had been considering the advisability of establishing a sanitarium for tuberculosis patients, and in 1899 it was decided that the abandoned military reservation at Fort Stanton, New Mexico, was the most suitable site in possession of the government that was not being used for other purposes. The executive order of April 1, 1899, directed that this reservation be turned over to the Marine Hospital Service. The first patient was received at this institution on November 18, 1899, and on June 30, 1900, forty-seven patients were under treatment.

When provision was made for civil governments in Hawaii and the former Spanish Islands the quarantine duties of the Marine Hospital Service were extended to these possessions. The executive order of January 3, 1900, placed the quarantine administration of the Philippine Islands under the Marine Hospital Service and set aside $300,000 from the revenues of the islands for that purpose. Section 10 of the act of April 12, 1900 (31 Stat. L., 80), creating a civil government for Porto Rico, and Section 97 of the act of April 30, 1900 (31 Stat. L., 160), creating a government for the territory of Hawaii, provided that quarantine stations should be established as directed by the Supervising Surgeon General of the Marine Hospital Service, and that quarantine regulations should be under

[30] *Ibid.*, 1899, p. 577; 1900, p. 523.
[31] 57 Cong. 1 session., S. doc. 269.

the control of the United States Government. The law relating to Hawaii stipulated that the health laws of the island should remain in the jurisdiction of the government of the territory, subject to the quarantine laws and regulations of the United States.

A new building for the Hygienic Laboratory was provided for in the sundry civil appropriation act approved March 3, 1901 (31 Stat. L., 1137), but the building was not occupied until 1904. This act appropriated $35,000 for the erection of "necessary buildings and quarters for a laboratory for the investigation of infectious and contagious diseases, and matters pertaining to the public health." The wording of this appropriation is significant in that there is recognition of the fact that the Marine Hospital Service was no longer concerned solely with medical treatment of specified beneficiaries, but had become the representative of the national government in health matters. At first the investigations made in the Hygienic Laboratory had been entirely in connection with the hospital branch of the Service. Gradually they had extended more and more into questions of public health and quarantine, owing mainly to demands made by states and municipal health organizations.[32] For many years the results of its work had been published as appendices to the annual report of the Surgeon General, but in 1899 the reports had increased to such an extent that it was deemed advisable to issue them in the form of bulletins.[33]

Further authority over quarantine anchorages was conferred on the Supervising Surgeon General by the act of March 3, 1901 (31 Stat. L., 1086), which also made subject to quarantine regulations any vessel which might arrive within the territorial limits of the United States, but which did not attempt to enter any port. The act of February 15, 1893, applied only to vessels entering United States ports.

In 1902 an appropriation of $250,000 was made for the purchase of the property used for a marine hospital at New York. At the most important port in the country, the hospital had never been housed in a government building. Until 1879 seamen were treated at various hospitals under contract, but in that year the use of Bedloes Island was obtained from the War Department, and the

[32] Sup. Surg. Gen., Annual Report, 1897, pp. 716-17.
[33] *Ibid.*, 1899, p. 845.

hospital was operated at that point for three years, when it became necessary to vacate because of the erection of the Statue of Liberty. After 1882 the hospital was quartered in rented buildings on Staten Island.

In September, 1901, the Surgeon General submitted to the Secretary of the Treasury a plan for organizing a yellow fever institute, composed of officers of the Service and others specially qualified, who should become members by invitation. The object of this organization was to "collect all facts concerning yellow fever, to designate the specific lines of inquiries to be made, and to make them." This institute became a part of the Division of Scientific Research, which was organized at the same time.[84] The results of the work were published in the series known as "Bulletin of the Yellow Fever Institute."

The Public Health and Marine Hospital Service, 1902 to 1912. The historical development of the Public Health Service up to the beginning of the twentieth century shows that until the time of the short-lived National Board of Health, it was exclusively a medical relief agency. After the demise of this board about 1883, quarantine activities also became a function of the Service. Toward the latter part of the nineteenth century, other duties were added, such as the interstate control of diseases and investigations in the interests of the public health. This increase in scope pointed to the advisability of changing the name of the Service and giving it more specific statutory powers.

Four bills relating to the Service had been introduced during the first session of the Fifty-seventh Congress, and on July 1, 1902, the President approved the act which changed the name of the Service to the Public Health and Marine Hospital Service (32 Stat. L., 712). The act also changed the designation of the head of the Service to Surgeon General, and fixed his salary at $5000 a year. The salaries and allowances of the commissioned medical officers were to be the same as provided by existing regulations of the Service. Commissioned medical officers detailed in charge of administrative divisions in Washington were to have the rank of assistant surgeons general. The President was authorized to utilize the Service in time of war in such manner as would promote

[84] Surgeon General, Public Health and Marine Hospital Service, Annual Report, 1902, p. 439.

the public interest without impairing the efficiency of the Service in filling the functions for which it was created. He was also given authority to prescribe regulations governing the administration, discipline, and uniforms of the Service.

A definite organization was provided for the Hygienic Laboratory, which had previously been operated under regulations of the Service, and which had been doing work in the field of bacteriology and pathology only.[35] Provision was made for a director of the laboratory, detailed from the corps of commissioned officers of the Service. The Surgeon General was authorized to appoint heads of the Divisions of Chemistry, Zoology, and Pharmacology from outside the Service at compensations to be fixed by the Surgeon General if commissioned medical officers were not available for this duty. An advisory board of nine persons was created for the purpose of consulting with the Surgeon General relative to the investigations to be undertaken and the methods of conducting the work. This board was made up of the director of the laboratory, five persons skilled in laboratory work in its relation to the public health and not in the regular employ of the government, to be appointed by the Surgeon General, and three experts detailed from the Army, the Navy, and the Bureau of Animal Industry, by the Surgeon General of the Army, the Surgeon General of the Navy, and the Secretary of Agriculture, respectively.

An important provision for furthering the coördination of national and state operations was made in this act by requiring the Surgeon General to call an annual conference of the health authorities of the states and territories and the District of Columbia. That officer was likewise authorized to call a special conference when "the interests of the public health would be promoted," and required to call a special conference at the request of not less than five state or territorial boards of health, quarantine authorities, or state health officers.

In order to secure uniformity in the registration of mortality, morbidity, and vital statistics, it was made the duty of the Surgeon General to prepare and distribute, after the annual conference of health officers, "suitable and necessary" forms for the collection and compilation of such statistics, which were to be published in the

[35] *Ibid.*, 1905, p. 218.

Public Health Reports. In the same year, however, Congress passed another law (32 Stat. L., 52), which authorized the Bureau of the Census to collect vital statistics.[36]

Tests of Biologic Products. An additional duty was placed on the Service by another act approved July 1, 1902 (32 Stat. L., 728), providing for tests of viruses applicable to the diseases of man and the licensing of manufacturers of these products. This law was passed in order to afford protection against infection from impure preparations and to establish a standard of strength and purity. The act provided for a board composed of the Surgeon General of the Army, the Surgeon General of the Navy, and the Supervising Surgeon General of the Marine Hospital Service, which was given authority, subject to the approval of the Secretary of the Treasury, to promulgate regulations governing the licensing of establishments engaged in the "propagation and preparation of viruses, serums, toxins, antitoxins, and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried, or brought for sale from any state, territory, or the District of Columbia, into any other state, territory, or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States." The execution of the act was placed in the hands of the Secretary of the Treasury, but all tests and inspections have been made through the Public Health Service, as that was the only organization in the Treasury Department qualified to undertake work of this character.

The first regulations under this act were promulgated on February 21, 1903, and as the law required an interval of six months before the regulations became effective, they were not in force until August 21, 1903.[37] Since that time inspections and examinations have been made continuously.

Developments in Activities and Organization. The Division of Zoology of the Hygienic Laboratory was organized August 16, 1902,[38] and the first annual conference of the state and national health authorities was held on June 3, 1903.[39]

[36] See page 290.
[37] Surg. Gen., Annual Report, 1904, p. 370.
[38] *Ibid.*, 1903, p. 330.
[39] *Ibid.*, p. 321.

A new law regulating the admission of aliens, passed on March 3, 1903 (32 Stat. L., 1213), did not materially change the status of the Service as regards the examination of immigrants. Epileptics were added to the lists of persons to be excluded, and provision was made that physical and mental examination must be made by medical officers of the Service, who shall have had at least two years' experience in the practice of their profession after receiving the degree of doctor of medicine. If medical officers of the Service were not available, civil surgeons of not less than four years' experience might be employed by the Commissioner General of Immigration. The medical officers certified the facts to the immigration officers and boards of inquiry, and were not responsible for the execution of the statute. The Immigration Service was required to reimburse the Public Health and Marine Hospital Service for all expenses incurred in making medical inspection of immigrants.

The Division of Pharmacology in the Hygienic Laboratory was established March 1, 1904, and several weeks later the laboratory moved into the new building provided by the act of March 3, 1901.[40] The act approved March 18, 1904 (33 Stat. L., 104), making appropriations for the legislative, executive, and judicial expenses of the government for the fiscal year ending June 30, 1905, contained a provision that the Public Health and Marine Hospital Service should remain under the Treasury Department until otherwise specifically provided by law. This legislation was designed to prevent the transfer of the service to the new Department of Commerce and Labor, created by the act of February 14, 1903 (32 Stat. L., 825-830). Section 12 of the latter act provided that the President might transfer to the Department of Commerce and Labor the whole or part of any branch of the State, Treasury, War, Navy, Justice, Post Office, or Interior Departments engaged in statistical or scientific work.

A joint resolution approved February 24, 1905 (33 Stat. L., 1283), made specific provision for printing the bulletins of the Hygienic Laboratory and the Yellow Fever Institute. Authority was given to print not to exceed ten bulletins of the laboratory and five bulletins of the institute in any one year, the edition of each bulletin being limited to 5000 copies.

[40] *Ibid.*, 1904, pp. 36, 68.

Officers of the Service had made a special investigation of leprosy in 1901, and at that time had recommended the establishment of a national home for lepers, but no action was taken by Congress. The prevalence of leprosy in the Territory of Hawaii led Congress to pass the act of March 3, 1905 (33 Stat. L., 1009), establishing a leprosy hospital and laboratory to be operated by the Public Health and Marine Hospital Service at Molokai, Hawaii. The Surgeon General was authorized to receive not exceeding forty patients, committed under legal authorization of the Territory of Hawaii. Fifty thousand dollars were appropriated for the necessary buildings and $50,000 for maintenance during the fiscal year ended June 30, 1906. It was not possible to make a contract for the erection of buildings within the amount appropriated, and the Service undertook the necessary construction work by day labor. This procedure involved considerable delay, and the hospital was not opened until December 23, 1909.[41]

A change in the method of supplying money for the Service was made in the deficiency appropriation act of March 3, 1905 (33 Stat. L., 1217). The permanent appropriation of the tonnage tax provided by the act of June 26, 1884 (23 Stat. L., 57), was repealed, effective June 30, 1906. The Secretary of the Treasury was required to submit detailed estimate for the fiscal year 1907 and annually thereafter. Since June 30, 1906, no permanent indefinite appropriations have been available, and the Service has been dependent upon annual appropriations made by Congress.

The organization of the Hygienic Laboratory was completed on June 20, 1905, with the appointment of a Chief of the Division of Chemistry.[42]

The extension of the national quarantine system was recommended by a conference of governors and representatives of the Southern states, held in Chattanooga on November 9 and 10, 1905.[43] This had also been urged by President Roosevelt in his annual message to Congress on December 6, 1904. The result of the general demand for more effective national control was the passage of the act of June 19, 1906 (34 Stat. L., 299). While this act did not confer any additional authority on the Secretary of

[41] *Ibid.*, 1910, p. 60.
[42] *Ibid.*, 1905, p. 227.
[43] *Ibid.*, 1906, p. 200.

the Treasury, it did have the effect of extending the national system by the appropriation of $500,000 for the purchase of local quarantine stations. By June 30, 1907, the Service had taken over the quarantine stations of South Carolina, Mobile, and New Orleans, and made arrangements to establish a station at Galveston. At that time the national system controlled the Pacific Coast, the Gulf Coast with the exception of Texas, and the Atlantic Coast with the exception of Baltimore, New York, Boston, and a few of the neighboring minor ports.

On February 20, 1907, a new law (34 Stat. L., 898) governing immigration was enacted, but the duties of the Public Health and Marine Hospital Service as regards the inspection of immigrants were not changed. Two years later the sundry civil appropriation act of March 4, 1909 (35 Stat. L., 1027), repealed the portion of the immigration act of February 20, 1907, requiring the Public Health and Marine Hospital Service to be reimbursed by the Immigration Service for all expenses incurred in making medical inspections of immigrants, and thereafter this expense was met from the specific appropriations of the Public Health and Marine Hospital Service.

The marine hospitals maintained by the Service gave excellent opportunity for the study of many diseases, but it was felt that the scientific work would be improved if there could be admitted to the marine hospitals patients who were suffering from diseases that it was desirable to study, but who were not entitled to hospital service under the law. Accordingly, Congress was induced to insert in the sundry civil appropriation act approved March 4, 1911 (36 Stat. L., 1394), a provision that persons with infectious or other diseases affecting the public health may be admitted to marine hospitals for the purpose of study, not to exceed ten cases in any one hospital at one time.[a]

During the next two years several additional lines of general health activities were undertaken in coöperation with other government bureaus or in connection with new legislation. In January, 1911, a passed assistant surgeon was detailed to one of the mine rescue cars of the Bureau of Mines to make studies of the diseases of miners in West Virginia. In May of the same year the Chief of

[a] This provision was carried in each later appropriation act up to 1922, after which it was omitted.

the Division of Zoology was detailed with a mine rescue car to study hookworm among miners, and an assistant surgeon was assigned to the mine rescue car at Pueblo in order to give advice regarding sanitary and medical matters and to make investigations of hygienic conditions in mines and of the influences of gases.

In 1912 a medical officer was detailed to the Department of the Interior to assist the Bureau of Education in the supervision of measures relating to the medical and surgical relief of the natives of Alaska.

The Public Health Service Since 1912. For several years prior to 1912 there had been a definite movement throughout the country for the establishment of a national bureau of health.[45] The Republican and Democratic parties had advocated such a bureau in their platforms of 1908, and President Taft urged the creation of a unified Federal health agency in two of his annual messages to Congress. Bills to this end were introduced in Congress in 1910 and 1912, but that body did not see fit to pass the desired legislation. Instead, a law (37 Stat. L., 309) was passed changing the name of the Public Health and Marine Hospital Service to the Public Health Service, and extending the field of activity by the provision that the Service may "study and investigate the diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution either directly or indirectly of the navigable streams and lakes of the United States, and it may from time to time issue information in the form of publications for the use of the public." Under this law the Service has ample authority to make any studies relating to health and diseases for which funds are available. It will be noted that this law is permissive. In 1912 Congress established the Children's Bureau in the Department of Commerce and Labor and in its organic act (37 Stat. L., 79) *required* this bureau to investigate and report on all matters pertaining to the welfare of children and child life among all classes of the population, especially such questions as infant mortality, the birth rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of

[45] This movement is described more in detail in a subsequent chapter. See page 377.

children, employment, and legislation affecting children in the several states and territories.[46]

The law of July 1, 1902, had provided that the salaries and allowances of the commissioned officers of the Service should continue as fixed by the existing regulations. The act of August 14, 1912, which was the first law in which the salaries were stated, fixed them as follows: Surgeon General, $6000; Assistant Surgeon General, $4000; Senior Surgeon $3500; Surgeon, $3000; Passed Assistant Surgeon, $2400; Assistant Surgeon, $2000. The grade of senior surgeon was a new one; the number being limited to ten. Provision was also made for longevity pay for officers below the rank of surgeon general, at the rate of 10 per cent of the annual salary for each five years' service, but the longevity pay was not to exceed 40 per cent of the basic salary, and total of the basic salary and longevity increase was not to exceed $5000 for Assistant Surgeons General, $4500 for Senior Surgeons, and $4000 for Surgeons. Compensation was at the rates given above until January 1, 1920.[47]

New Activities. Duties in connection with the law imposing a tax on matches made of common poisonous white or yellow phosphorus were imposed on the Service by regulations issued by the Commissioner of Internal Revenue on May 10, 1913, in accordance with the provisions of the act of April 9, 1912 (37 Stat. L., 81).[48] The purpose of this tax was to prevent the manufacture of matches made of common poisonous white or yellow phosphorus, the Commissioner of Internal Revenue being authorized to make the necessary regulations. As the officer had no administrative machinery for making the scientific examinations required by the statute, he delegated that portion of the work to the Public Health Service. The regulations provided that each manufacturer should furnish samples of his product and material for examination whenever deemed necessary. In addition the Surgeon General was authorized to buy matches in the open market in order to determine whether poisonous material was being used. If the Surgeon General found that white and yellow phosphorus was being used in any

[46] See page 232.
[47] See page 116.
[48] United States Internal Revenue Regulations No. 32. May 1913. Regulations governing white phosphorus matches under internal-revenue law.

form he was to make an examination of the factory and materials, as well as of the persons employed. The results of these examinations were to be reported to the Commissioner of Internal Revenue as a basis for determining whether the factory was subject to the tax.[49]

The Indian appropriation act for the fiscal year 1913, approved August 24, 1912 (37 Stat. L., 519), appropriated $10,000 to enable the Public Health Service to report on the prevalence of contagious diseases among the Indians of the United States. Fourteen officers were assigned to this work and over 39,000 Indians were examined.[50] The results of the survey were published.[51]

The deficiency act approved March 4, 1913 (37 Stat. L., 915), provided that the Director of the Hygienic Laboratory should receive the pay and allowances of a Senior Surgeon.

The sundry civil act for the fiscal year 1914, approved June 23, 1913 (38 Stat. L., 25), contained for the first time an appropriation for field investigations reading as follows: "Field investigations of public health matters: For investigations of diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage, and the pollution of navigable streams and lakes of the United States, including personal services, $200,000." This appropriation resulted from the increase in activities incident to the passage of an act of August 14, 1912.

During the fiscal year ending June 30, 1914, the additional work authorized by the act of August 14, 1912, and made possible by the increased appropriations, was conducted along two general lines, diseases of man and sanitation, and investigations of water supplies and sewage disposal.[52] Among the general diseases of man investigated were beriberi, diphtheria, endemic goitre, hookworm disease, leprosy, typhoid fever, malaria, pellagra, trachoma, tuberculosis, and typhus fever. The following studies of occupational diseases were made: (1) Health of garment workers in New York City, (2) tuberculosis in Cincinnati as related to certain industries, (3) sanitary survey of Indiana industries employing woman labor, (4) trachoma among steel mill workers, (5) mine sanitation stud-

[49] Surg. Gen., Annual Report, 1913, p. 46.
[50] *Ibid.*, p. 25.
[51] 62 Cong. 3 sess., S. doc. 1038.
[52] Surg. Gen., Annual Report, 1914, p. 16.

ies, and (6) metallurgical plant investigations; the two last being in coöperation with the Bureau of Mines.[53] In addition, systematic investigations of rural sanitation, school hygiene, industrial hygiene, and health organization and administration were taken up and enlarged. The investigations of water supplies and sewage included these distinct lines of research: (1) Pollution of rivers and coastal waters, (2) disposal of sewage, and (3) treatment of industrial wastes. All the work undertaken had a direct bearing on the protection of water supplies and the shellfish industry, and the sewage studies were of practical benefit to householders and small communities in the prevention of disease.[54]

Medical Aid to Deep Sea Fisheries, 1914. Medical aid to crews of American vessels engaged in the deep sea fisheries was authorized by the act approved June 24, 1914 (38 Stat. L., 387), which provided that the Secretary of the Treasury might assign a revenue cutter to this work and detail such surgeons and other persons of the Public Health Service as might be necessary.

Inoculation of Government Employees, 1915. In order to protect government employees against typhoid fever and smallpox, the Secretary of the Treasury on February 12, 1915, issued an order directing medical officers of the Service to perform vaccination against typhoid fever and smallpox for all civil employees engaged in interstate travel or regularly engaged in handling mail or other material to be carried in interstate traffic.[55]

Fumigation of Forecastles, 1915. The seamen's act of March 4, 1915 (38 Stat. L., 1166), provided that the forecastles of merchant ships should be fumigated at such intervals as may be provided by regulations of the Surgeon General of the Public Health Service, with the approval of the Department of Commerce.

Studies of Rural Sanitation, 1916. Studies of rural sanitation had been undertaken soon after the enlargement of the activities of the Service resulting from the passage of the act of August 14, 1912, but the first specific appropriation for this work was made in the deficiency appropriation act approved February 28, 1916 (39 Stat. L., 21), which made $25,000 available for this purpose.

[53] *Ibid.*, pp. 46-52.
[54] *Ibid.*, p. 17.
[55] *Ibid.*, 1915, p. 277.

An appropriation has been made for this work in each subsequent annual appropriation act.

Control of Biologic Products, 1916. The sundry civil act for the fiscal year 1917, approved July 1, 1916 (39 Stat. L., 279), contained the first specific appropriation for expenses of regulating the propagation and sale of viruses, serums, toxins, and analogous products required by the act of July 1, 1902.[56] Up to this time the expenses of this work had been paid from the appropriations for traveling expenses and for the maintenance of the Hygienic Laboratory.[57]

National Home for Lepers, 1917. As early as 1902 the Service had recommended the establishment of a home for lepers, but this institution was not authorized until February 3, 1917 (39 Stat. L., 872). The Secretary of the Treasury was authorized to obtain a suitable site and erect necessary buildings for a home for the care and treatment of persons afflicted with leprosy, this institution to be under the administration of the Public Health Service. This act provides that the home shall receive any person afflicted with leprosy, who presents himself or herself, who may be apprehended under the authority of the quarantine acts, or who may be "consigned" to the home by the proper health authorities of any state, territory, or the District of Columbia. The Surgeon General is authorized, at the request of the state or territorial authorities, to send for persons afflicted with leprosy and to convey them to the home for detention and treatment; authority is given to pay transportation expenses if the transportation is undertaken for the protection of the public health. The World War interfered with the selection of a site and the home at Carville, Louisiana, was not opened until 1920.

Hospital Treatment for Injured Government Employees, 1917. Compensation to employees of the government injured in the performance of their duties was provided for in the act approved September 7, 1916 (39 Stat. L., 742-750). The administration of this act was placed under an independent commission, the Employees' Compensation Commission, which was organized March 17, 1917, but the actual work of this Commission did not

[56] See page 98.

[57] Sundry Civil Bill 1917. Hearings before subcommittee of House Committee on Appropriations, p. 129.

begin until April 1, 1917.[58] Section 9 of the act of September 7, 1916, provides that "United States medical officers and hospitals" shall furnish reasonable medical, surgical and hospital services and supplies to any government employee injured while in the performance of his duty. This act added to the beneficiaries of the hospitals of the service, as the marine hospitals were generally closer to the homes of injured employees than those of the Army and Navy. Out-patient relief was given and physical examinations made at the other stations of the service. During the fiscal year 1918 this class of patients received 15,291 hospital days relief and 6181 office treatments; during the fiscal year 1924 this service had grown to 43,423 hospital days relief and 121,904 office treatments.

Medical Inspection of Immigrants, 1917. The present law governing the medical inspection of immigrants was passed February 5, 1917, and became effective May 1, 1917 (39 Stat. L., 874). The classes excluded on medical grounds are "idiots, imbeciles, feebleminded persons, epileptics, insane persons, persons who have had one or more attacks of insanity at any time previously, persons of constitutional psychopathic inferiority, persons with chronic alcoholism; . . . persons afflicted with tuberculosis in any form or with a loathsome or dangerous contagious disease, [and] persons not comprehended within any of the foregoing excluded classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such physical defect being of a nature which may affect the ability of such alien to earn a living."

The general supervision of the admission of aliens is continued under the Bureau of Immigration of the Department of Labor, but the physical and mental examination of all arriving aliens is required to be made by medical officers of the Public Health Service who have had at least two years' experience in the practice of their profession since receiving the degree of doctor of medicine. If medical officers of the Public Health Service are not available, civil surgeons of not less than four years' experience may be employed by the Immigration Service. An alien certified by the examining officer for insanity or mental defects may appeal to a

[58] Employees' Compensation Commission, Annual Report, 1918, p. 5. See Chapter XIV, page 342.

board of medical officers of the Public Health Service to be convened by the Surgeon General.

As this act requires the physical and mental examination of all "arriving aliens" (Section 16), it applies also to all alien seamen. Under the earlier law it was necessary to examine only those seamen who desired to land, but the necessity of examining all alien seamen on incoming ships added greatly to the work. For instance, at New York during one month in 1917 there were inspected 6799 immigrants and 16,028 alien seamen.[59]

The Secretary of the Treasury was given authority to detail medical officers of the Public Health Service to duty in foreign countries in connection with the enforcement of the law.

World War Activities. On April 3, 1917, when it became evident that war would be declared against Germany, the President put into effect the provisions of Section 4 of the act approved July 1, 1902, and issued the following executive order making the Public Health Service a part of the military forces of the United States:[60]

> Under the authority of the act of Congress, approved July 1, 1902, and subject to the limitations therein expressed, it is ordered that hereafter in times of threatened or actual war the Public Health Service shall constitute a part of the military forces of the United States, and in time of threatened or actual war, the Secretary of the Treasury may upon request of the Secretary of War or the Secretary of the Navy, detail officers or employees of said service for duty either with the Army or the Navy. All the stations of the Public Health Service are hereby made available for the reception of sick and wounded officers and men, or for such other purposes as shall promote the public interest in connection with military operations.

Since many local health authorities were unable to cope adequately with the health problems created by the establishment of military camps in or near their jurisdiction, the Public Health Service inaugurated a system of extra-cantonment sanitation and also of control over areas contiguous to important industrial centers. The American Red Cross assisted in this work by making available personnel and equipment to the Service. State and local authorities also supplemented the work with funds and personnel,

[59] Surg. Gen., Annual Report, 1917, p. 152.
[60] *Ibid.*, p. 317.

and gave to the officers of the Service necessary state or local authority.

In the summer of 1917, such activities were under way by the Public Health Service in twenty-six extra-cantonment zones, and by the end of 1918 had been extended to forty-seven areas. All types of public health activities were undertaken, the personnel eventually consisting of forty-nine commissioned officers, seventy-two acting assistant surgeons, and about four hundred other technical employees.

In order to prevent the interstate spread of disease by either the military forces or the civil population, the Secretary of the Treasury on May 16, 1917, issued an order that vaccination against smallpox, typhoid fever, and paratyphoid fever might be obtained free of charge by any person at places designated by the Surgeon General of the Public Health Service.[61]

After the acquisition of the Virgin Islands a medical officer was sent to St. Thomas on July 24, 1917, with orders to report to the governor for duty as quarantine officer. The existing regulations were continued in force until the promulgation of the executive order of September 27, 1917, which extended the national quarantine laws and regulations to the islands.[62]

On July 1, 1918, President Wilson issued an executive order placing all sanitary and public health activities carried on by any executive bureau, except those of the Army, Navy, and the Bureau of Labor Statistics, under the control of the Secretary of the Treasury, which, of course, meant the Public Health Service.[63]

The work taken over as a result of this order included the maintenance of sanitary conditions in 170 shipyards; supervision over medical and sanitary matters in industrial plants having contracts with the Ordnance Department; medical supervision over nitrate plants at Nitro, West Virginia; Muscle Shoals, Alabama; Ancor and Toledo, Ohio; Nashville, Tennessee; and Richmond, Virginia; and the formulation, in coöperation with the Working Conditions Service of the Department of Labor of general sanitary codes to protect the workers in war industries.

In the field of scientific research the war activities included studies of the relation of industrial fatigue to efficiency, undertaken

[61] *Ibid.*, p. 251.
[62] *Ibid.*, 1918, pp. 227-8.
[63] *Ibid.*, p. 10. See page 279.

in coöperation with the Council of National Defense; the detection and prevention of trinitrotoluol poisoning; the nutritive value of various kinds of flour and bread; the influence of heat on the vitamine content of beef; the development of a protective varnish against dermatitis from parazol; the preparation of an antitoxin against gas gangrene; the examination of specimens of food supposed to have been contaminated by enemy agents; and the formulation of toxicological and chemical standards for arsphenamine.[64]

Control of Venereal Diseases. The marked prevalence of venereal diseases at the beginning of the war proved to be such a grave menace to the manpower of the country that the military and civil authorities took prompt steps to control those diseases in order to protect the health of the military forces. The treatment of infected enlisted men was the function of the medical departments of the Army and Navy, but it was the duty of the civil authorities to stamp out the sources of infection.

The acts of May 18, 1917 (40 Stat. L., 83), and October 6, 1917 (40 Stat. L., 393), conferred upon the Secretary of War and the Secretary of the Navy, respectively, police powers for the suppression of prostitution in the immediate vicinity of military and naval stations of every character, but these acts made no provision for the medical treatment of infected persons or for any general educational measures. The prevalence of prostitution in areas that could not be brought under the control of the military and naval authorities resulted in the infection of Army enlisted men, as well as of men who had not been called to the colors.

In connection with the sanitation of the extra-cantonment areas by the Public Health Service, the American Red Cross, at the beginning of the war, provided funds for the operation of venereal disease clinics, which were under the supervision of the Public Health Service. These clinics were started in December, 1917, and by July, 1918, twenty-five were in active operation and 10,370 persons had been treated.[65]

At the beginning of 1918 only two states—California and Massachusetts—had adopted a comprehensive plan for combating venereal diseases. Early in January, 1918, the Surgeon General of

[64] Warren and Bolduan, War Activities of the United States Public Health Service. Public Health Service, Reprint 531 (1919), p. 15.

[65] Surg. Gen., Annual Report, 1918, p. 98.

the Public Health Service sent a telegram to all state health officers, requesting their coöperation in a campaign for the control of these diseases. The hearty and universal reply encouraged the preparation of suggestions to state boards and the outline of regulations. This extra-cantonment work was under the direction of the Division of Domestic Quarantine, which had authority to prohibit the transportation of infected persons in interstate traffic, but had no police power within the separate states. The Division of Domestic Quarantine, however, developed a plan for coöperation between the Public Health Service and the state authorities.

Briefly summarized, the plan provided for the appointment of an officer in each state to direct the work of venereal disease control. The salary of such officer, selected by the state health officer was to be paid by the state and federal governments jointly. Each state was at once to provide for the notification of all cases of venereal disease, and to make provision for the extension of facilities for early diagnosis and treatment. Repressive measures, looking to isolation and treatment of dangerously infected individuals, and educational measures for the general public as well as for the infected persons, were also to be provided for.[66]

In addition, arrangements were made for (1) better coöperation between the Commission on Training Camp Activities and the Public Health Service officer in charge of extra-cantonment sanitation; (2) provision for treatment of United States prisoners, and (3) distribution of free arsphenamine to clinics operated under joint state and federal control. On July 1, 1918, the President, as stated above, issued an executive order centralizing all civil public health activities of the government in the Treasury Department.

As the work developed it became evident that the states would not have sufficient funds to carry on any educational propaganda. At the annual meeting of the state health officers in June, 1918, the matter was discussed and a bill was drafted which had the approval of the Council of National Defense, and of the Surgeons General of the Army, Navy, and Public Health Service. This bill was introduced in the Senate as Senate bill 4608, but was incorporated in Chapter XV of the army appropriation act for the fiscal year 1919, approved July 9, 1918 (40 Stat. L., 886).

[66] Warren and Bolduan, p. 20.

Section 3 of this act created a Division of Venereal Diseases in the Public Health Service "to be under the charge of a commissioned medical officer of the United States Public Health Service detailed by the Surgeon General of the Public Health Service, which officer while thus serving shall be an Assistant Surgeon General of the Public Health Service, subject to the provisions of law applicable to assistant surgeons general in charge of administrative divisions in the District of Columbia of the Bureau of the Public Health Service. There shall be in such Division such assistants, clerks, investigators, and other employees as may be necessary for the performance of its duties and as may be provided for by law."

Section 4 prescribed that the "duties of the Division of Venereal Diseases shall be in accordance with rules and regulations prescribed by the Secretary of the Treasury, (1) to study and investigate the cause, treatment, and prevention of venereal diseases; (2) to coöperate with State Boards or Departments of Health for the prevention and control of such diseases within the states; and (3) to control and prevent the spread of these diseases in interstate traffic; *provided,* that nothing in this chapter shall be construed as limiting the functions and activities of other departments or bureaus in the prevention, control, and treatment of venereal diseases and in the expenditure of moneys therefor."

Section 7 appropriated $200,000 for the establishment and maintenance of the Division of Venereal Diseases during the fiscal year 1919.

This act provided also for other agencies for the suppression of venereal diseases. Section 1 created the Interdepartmental Social Hygiene Board, consisting of the Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury as ex-officio members, and of the Surgeons General of the Army, Navy, and the Public Health Service, or of representatives designated by the heads of the War, Navy, and Treasury departments.

Section 2 authorized and directed the Secretary of War and the Secretary of the Navy "to adopt measures for the purpose of assisting the various states in caring for civilian persons whose detention, isolation, quarantine, or commitment to institutions may be found necessary for the protection of the military and naval forces of the United States against venereal diseases."

Section 5 appropriated $1,000,000 for the fiscal year 1919, to be expended under the joint direction of the Secretary of War and the Secretary of the Navy to carry out the provisions of Section 2 quoted in the preceding paragraph. These secretaries authorized the Interdepartmental Social Hygiene Board to administer this fund.[67]

Section 6 appropriated $1,000,000 for each of the fiscal years 1919 and 1920, to be paid to the states for the use of boards or departments of health in the prevention, control, and treatment of venereal diseases. This sum was to be allotted to each state, in accordance with rules and regulations prescribed by the Secretary of the Treasury, in proportion to the population of each state. For the fiscal year 1920 it was provided that each state should specifically appropriate or set aside for the same purpose an amount equal to the money allotted by the United States. The original draft of the bill[68] provided that the Interdepartmental Social Hygiene Board should recommend rules and regulations for the expenditure of this sum, but the act as passed did not give that Board any part in preparing the regulations, which were drafted by the Public Health Service and approved by the Secretary of the Treasury. As the fund was to be disbursed by the Interdepartmental Social Hygiene Board, the regulations provided that the state allotment must be expended in accordance with an accounting system to be prescribed by that Board.

There was appropriated also to the Interdepartmental Social Hygiene Board, $100,000 for each of the fiscal years 1919 and 1920, to be paid to institutions for scientific research for discovering "more effective medical measures in the prevention and treatment of venereal diseases," and $300,000 to be paid to suitable institutions "for the purpose of discovering and developing more effective educational measures in the prevention of venereal diseases, and for the purpose of sociological and psychological research related thereto."

The Interdepartmental Social Hygiene Board was directed to recommend to the Secretary of the Treasury, the Secretary of War, and the Secretary of the Navy, such general measures "as

[67] Interdepartmental Social Hygiene Board, Annual Report, 1920, p. 171.

[68] Senate Committee on Military Affairs, Hearings on Army appropriation bill, 1919, p. 59.

will promote correlation and efficiency in carrying out the purposes of this chapter by their respective departments." An appropriation of $100,000 was made for the fiscal year 1919, to be used under the direction of the Interdepartmental Social Hygiene Boards for any purpose for which any of the other appropriations in the same chapter were available.[69]

The act of July 9, 1918, described above, establishing the Division of Venereal Diseases in the Public Health Service and imposing specific duties upon it is similar to the acts of 1893 and 1912 authorizing the Public Health Service to "coöperate with and aid state and municipal boards of health" and "to study and investigate the diseases of man and conditions influencing the propagation and spread thereof." Because of the magnitude of the venereal disease problem, however, and its constant menace to national health, Congress apparently considered it proper to create a special division empowered to give exclusive attention to the promotion of venereal disease control work along specific lines. After the creation of the Division in July, 1918, the Secretary of the Treasury, on September 4, issued the regulations under which state boards of health could obtain their allotments of the million dollar fund;[70] and on November 19, 1918, regulations governing the interstate travel of persons infected with venereal diseases were issued by the Secretary.[71] Additional clinics were established, the aid of physicians and druggists was enlisted, the state and city authorities were urged to suppress prostitution, and an extensive educational campaign was carried on by means of pamphlets, lectures and motion pictures.

Hospital Relief for the Army and Navy. The executive order of April 3, 1917, provided that all the stations of the Public Health Service should be available for the reception of sick and wounded officers and men. This work, however, did not throw any extraordinary burden on the Public Health Service, as during the fiscal year 1918, the relief extended to Army and Navy patients amounted to only 31,267 hospital days out of 534,991 hospital days and the office treatments were only 4455 out of 96,064; during the

[69] For statements of the work of the Interdepartmental Social Hygiene Board, see Manual for the various agents of the Interdepartmental Social Hygiene Board, 1920, and Annual Report, 1920.

[70] Public Health Reports, September 13, 1918.

[71] Surg. Gen., Annual Report, 1919, p. 238.

fiscal year 1919, the Army and Navy relief amounted to 46,197 hospital days out of a total of 757,010 and 2697 office treatments out of 104,763. The hospital work did not increase materially until after the men were discharged from the Army and became beneficiaries of the Bureau of War Risk Insurance.

Influenza Epidemic of 1918. Early in the fall of 1918 influenza became prevalent in the United States, and by the middle of September had spread throughout Eastern states. In order to supply information regarding methods of prevention, six million copies of a pamphlet for the use of the laity were widely distributed. On September 26 the state health officer of Massachusetts requested immediate aid from the Public Health Service, as not enough doctors and nurses were available. There was a shortage of doctors and nurses in other places, and by the first of October the situation had become so serious that Congress appropriated a million dollars to enable the Public Health Service to combat and suppress the disease (40 Stat. L., 1008). Even after the money was provided it was difficult to obtain medical and nursing personnel. The Service could not undertake to provide enough doctors and nurses to treat individual cases, although this was done wherever possible. The work of relief was decentralized by appointing a director for each state, and the local resources were organized in advance of the height of the epidemic. "Plans were made for opening emergency hospitals as needed, volunteer nurses were organized, emergency kitchens established, etc., and in this way many communities were able to take care of themselves when the epidemic was well established." During the epidemic sixty-four commissioned officers were on influenza duty, in addition to 1085 other physicians, 703 nurses and nurses' assistants, and 328 persons doing work of a miscellaneous character.[72]

Organization of Reserve Corps. On October 27, 1918, Congress authorized a reserve for the Public Health Service along lines similar to the Officers' Reserve Corps of the Army and Navy (40 Stat. L., 1017). This act provides that the President, after such examination as he may prescribe, may commission officers in the reserve for a period of five years. Reserve officers are subject to call to active duty at any time, and when called to active duty

[72] Surg. Gen., Annual Report, 1919, pp. 81-85.

receive the pay and allowances of the grade in which they hold commissions.

New Administrative Units. In order to extend and coördinate the educational work of the Service, a Section of Public Health Education was organized on April 7, 1919.[73]

The growth of the hospital work resulting from the treatment of discharged soldiers greatly increased the number of complaints of mistreatment of patients or mismanagement, and it was deemed advisable to create a separate administrative unit for the investigation of charges. Accordingly, the Inspection Section was created on February 20, 1920, with a commissioned officer of the rank of assistant surgeon general in charge. On August 29, 1920, the title of this unit was changed to General Inspection Service.[74]

Another administrative unit resulting from the growth of the work was the Purveying Service, organized April 9, 1920. Formerly there had been a purveying depot attached to the Division of Marine Hospitals and Relief. As this depot purchased supplies for all stations, and not for the hospitals exclusively, a separate unit reporting directly to the Surgeon General was created.[75]

Increased Compensation for Commissioned Officers, 1920. Increased compensation for commissioned officers of the Public Health Service, Army, Navy, Marine Corps, the Coast Guard, and the Coast and Geodetic Survey was provided by the act approved May 1, 1920 (41 Stat. L., 601). The increases granted to officers of the Public Health Service were $600 for assistant surgeons general and senior surgeons, $840 for surgeons, $720 for passed assistant surgeons, and $600 for assistant surgeons. The increased pay was to continue until June 30, 1922. A special committee consisting of five members of the Senate and five members of the House of Representatives was provided to investigate and to make recommendations relative to the readjustment of the pay and allowances of the officers in these organizations. Section 12 of this act provided also that the government should furnish transportation for the wife and dependent children of officers of the organizations

[73] *Ibid.*, p. 213.

[74] *Ibid.*, 1920, pp. 13-14.

[75] The Purveying Service was discontinued in 1922, when a general supply bureau for the entire Treasury Department was organized.

mentioned above, whenever they are ordered to make a permanent change of station.

Completion of National Quarantine System. Provision for the completion of the national quarantine system, begun by the act of February 15, 1893, was contained in the sundry civil appropriation act for the fiscal year 1921, approved June 5, 1920 (41 Stat. L., 875), which carried an appropriation for the purchase of the New York, Baltimore, and Texas quarantine stations. The Baltimore and Texas stations were already being operated under lease, and after the acquisition of the New York station on March 1, 1921, quarantine functions at all ports came under the jurisdiction of the Public Health Service.

Medical Treatment of Discharged Soldiers. From October 6, 1917, when an act granting compensation and medical relief to disabled soldiers was passed (40 Stat. L., 406), until August 9, 1921, when the United States Veterans' Bureau was created (42 Stat. L., 147), one of the principal activities of the Public Health Service was the hospitalization and care of ex-service men. In fact, these duties for a while overshadowed all other work of the Service.

The act of October 6, 1917, was administered by the Bureau of War Risk Insurance, which, like the Public Health Service, was a bureau of the Treasury Department. Early in 1918 the Service was requested to give the necessary hospital care to discharged soldiers, although Congress at that time had made no attempt to provide adequate facilities for the purpose. Such legislation was not passed until March 3, 1919 (40 Stat. L., 1302), and this was the first law which definitely recognized the Public Health Service as the instrumentality for furnishing medical relief to the beneficiaries of the Bureau of War Risk Insurance. This law appropriated $9,050,000 for hospital facilities, and was followed up by a number of appropriations and deficiency acts for maintenance, aggregating more than $20,000,000.

There followed an immediate expansion of hospital work by the Service.[76] Ten new hospitals were opened between April 1, and June 30, 1919, and over two hundred reserve officers were called

[76] See Cumming, H. S., The work of the Public Health Service in the case of disabled veterans of the World War. Public Health Service, Reprint No. 682 (1921).

into active duty. By December of 1919, 7200 beds were available, though even this number was insufficient. By the middle of 1920, fifty-four hospitals were in operation, while a year later the number had increased to sixty-two. Congress made additional appropriations, a sum of $18,600,000 being granted for hospital facilities on March 4, 1921 (41 Stat. L., 1364). Shortly thereafter, on August 9, 1921, the Veterans' Bureau was created as an independent establishment (42 Stat. L., 147), and to it was transferred certain of the hospital work, though the Public Health Service hospitals which were caring for veterans remained under that Service. On April 29, 1922, the President transferred by executive order all but the marine hospitals to the Veterans' Bureau, though these continued to care for ex-service men. This order relieved the Public Health Service of all responsibility for treatment of veterans, and the hospital work resumed its pre-war status, though considerably increased in extent.[77] The Service was left with twenty-four hospitals having a capacity of over three thousand beds.

During its operations on behalf of the Veterans' Bureau, the Public Health Service cared for more than 275,000 veterans, to whom were given more than 14,500,000 hospital relief days. In the out-patient clinics there were given about 2,000,000 treatments and about 1,500,000 physical examinations.

"The Public Health Service has been subjected to considerable criticism in the performance of this work, but when consideration is given to the volume of the work and the difficulties under which it is done, it is believed that it can be safely stated that the Public Health Service, in what was equivalent to a national emergency, successfully met the responsibility placed upon it by Congress."[78]

Further Revision of Salaries, 1922. On June 10, 1922, there was approved an act (42 Stat. L., 625) which established a new basis for fixing the salaries of the commissioned officers of the Public Health Service, Army, Navy, Marine Corps, Coast Guard, and Coast and Geodetic Survey. By this act the pay is fixed by rank and length of service, while the allowances for subsistence and quarters are determined by the rank and length of service, whether or not the officers have dependents.

[77] See Monograph No. 10, The Public Health Service, for a much more detailed account of this work for veterans. Also Chapter XIV, page 327.

[78] Surg. Gen., Annual Report, 1922, p. 236.

Current Activities. The functions of the Public Health Service, as previously stated, are to provide medical relief to certain beneficiaries, to prevent the introduction of disease into the United States, to prevent the interstate spread of disease, to coöperate with state health officials, and to conduct research into all phases of modern public health problems and make known the results of such investigations.

Medical Relief. Medical treatment for merchant seamen was the purpose for which the Marine Hospital Service was created in 1798, and this continued to be its only function for over three-quarters of a century. Gradually the service enlarged its activities in the field of quarantine, medical inspection of immigrants, sanitation, hygiene, and general investigations relating to the public health, until by 1918 the hospital work, measured by personnel and expenditures, while still important, was no longer the major activity. By 1920 the medical and hospital treatment of patients of the Bureau of War Risk Insurance had again become the major activity of the organization in terms of persons employed and money expended, and it still has an important place in the activities of the Service.

The benefits of medical and hospital care, which were originally limited to seamen of the American merchant marine, have been extended from time to time by Congress, or by regulation in conformity to Congressional enactments, until to-day many different classes of patients are eligible for such care and treatment. The beneficiaries of the Service may be summarized as follows:

1. Entitled to Hospital Relief and other Benefits.

a. Seamen of the Merchant Marine, that is, persons employed on vessels registered, enrolled, or licensed under the laws of the United States (Acts of: July 16, 1798, 1 Stat. L., 605; June 29, 1870, 16 Stat. L., 595; March 3, 1875, 18 Stat. L., 485; June 24, 1914, 38 Stat. L., 387; March 3, 1919, 40 Stat. L., 1302). But not persons employed on canal boats (Act of July 20, 1846, 9 Stat. L., 38; Joint Resolution of February 10, 1871, 16 Stat. L., 595).

b. Officers and enlisted men of the U. S. Coast Guard (Acts of: August 4, 1894, 28 Stat. L., 229; June 24, 1914, 38 Stat. L., 387; March 3, 1919, 40 Stat. L., 1302).

c. Officers and employees of the Public Health Service (Acts of June 23, 1913, 38 Stat. L., 24; September 7, 1916, 39 Stat. L., 743; March 3, 1919, 40 Stat. L., 1302).

d. Persons suffering from leprosy (Acts of March 3, 1905, 33 Stat. L., 1909; February 3, 1917, 39 Stat. L., 872).

e. Civil employees of the Government, patients of the Employees' Compensation Commission (Acts of September 7, 1916, 39 Stat. L., 743; March 3, 1919, 40 Stat. L., 1302).

f. Officers and crews, U. S. Bureau of Fisheries (Act of July 1, 1918, 40 Stat. L., 694).

g. Officers, crews, keepers, and assistant keepers, U. S. Lighthouse Service (Act. of August 28, 1916, 39 Stat. L., 538; March 3, 1919, 40 Stat. L., 1302).

h. Officers and seamen, U. S. Coast and Geodetic Survey (Regul. 1902; Treas. Dept. Cir. No. 11, 1905; Act of March 3, 1919, 40 Stat. L., 1302).

i. Seamen, Mississippi River Commission (Regul. 1897; Act of March 3, 1919, 40 Stat. L., 1302).

j. Seamen, vessels of U. S. Army (Regul. 1897, 1902; Act of March 3, 1919, 40 Stat. L., 1302).

2. Entitled to Physical Examinations.

a. Personnel, U. S. Coast Guard (entrance, promotion, retirement) (Act of April 12, 1902, 32 Stat. L., 100; June 22, 1906, 34 Stat. L., 452; June 28, 1915, 38 Stat. L., 800).

b. Civil-service employees suspected of having tuberculosis (Exec. Order, February 28, 1906).

c. Civil-service employees for retirement (Act of May 22, 1920, 41 Stat. L., 616).

d. Civil-service applicants and employees (Exec. Order, June 18, 1923).

e. Officers Reserve Corps, U. S. Army (Bur. Circ. No. 353, April 17, 1922; revised annually).

f. Citizens' military training camps (Bur. Circ. No. 336, February 23, 1922).

g. Miscellaneous: applicants for pilot's license; able-bodied seamen; applicants for military pensions; etc. (Regulations, division circulars, and requests by bureaus concerned).

3. Entitled to Vaccination against Smallpox and Typhoid Fever.

a. Civil employees in interstate travel or handling mail. (Treas. Dept. Circ. No. 313, November 24, 1922).

4. Pay Patients, Entitled to Hospital and Other Benefits.

a. Foreign seamen, the cost charged to masters of vessels (Acts of May 3, 1802, 2 Stat. L., 193; March 3, 1875, 18 Stat. L., 486; December 26, 1920; 41 Stat. L., 1082).

b. Beneficiaries of the U. S. Veterans' Bureau (Acts of October 6, 1917, 40 Stat. L., 406; March 3, 1919, 40 Stat. L., 1302; March 4, 1921, 41 Stat. L., 1397; August 9, 1921, 42 Stat. L., 147).

c. Discharged soldiers of allied nations (Act of December 24, 1919, 41 Stat. L., 374).

d. Personnel of Army, Navy, and Marine Corps (Exec. Order, April 3, 1917; general authority in Act of March 3, 1875, 18 Stat. L., 486).

e. Immigration patients (Current appropriation acts).

During the fiscal year 1925, a total of 209,304 patients received treatment; 43,287 were treated in hospitals and 166,017 furnished office relief. In addition, 76,661 were given physical examinations. These treatments and examinations were given in twenty-five marine hospitals; 120 second-, third-, and fourth-class stations; and in eight miscellaneous institutions. About half of the beneficiaries were American seamen. The comparative numbers of the various beneficiaries were as follows:

Beneficiary	Number of patients treated	Number of days relief in hospital	Number of physical examinations
American seamen	100,383	888,915	18,530
Employees' Compensation Commission	45,836	55,580	7,341
Coast Guard	34,052	60,336	13,394
Immigration Service	9,165	76,594	210
Public Health Service	4,576	8,348	1,075
U. S. Veterans' Bureau	4,360	112,558	920
Seamen, U. S. Army	2,225	21,827	73
Lighthouse Service	1,447	10,963	212
Foreign seamen	869	13,631	571
Coast and Geodetic Survey	556	2,227	540
Mississippi River Commission	573	6,282	25
Lepers	308	82,361	....
U. S. Army	296	434	532
U. S. Navy and Marine Corps	183	1,177	66
Miscellaneous	4,475	778	7,788
Pilots	....	....	6,606
Civil service applicants	....	....	18,778
Total	209,304	1,342,011	76,661

All of the hospitals of the Service are devoted to general medical and surgical patients, except that at Fort Stanton, New Mexico, which is for tuberculosis patients, and that at Carville, Louisiana, the National Leprosarium. All are under the supervision of the Division of Marine Hospitals and Relief.

Leprosy Hospitals. Hospitals for the treatment of persons suffering from leprosy are operated at Kalihi, Hawaii, and Carville, Louisiana. The hospital at Kalihi was authorized by the act of

March 3, 1905 (33 Stat. L., 1909), but was not opened until December 23, 1909. The work at this station includes clinical and laboratory studies for the purpose of finding remedies, as well as medical care and treatment of persons suffering from the disease. A national home for lepers was authorized by the act of February 3, 1917 (39 Stat. L., 872). That act provides that there shall be admitted to this home any person afflicted with leprosy who presents himself, who may be apprehended under authority of the United States quarantine laws, or who may be "consigned" to the home by the proper health authorities of any state, territory, or the District of Columbia. The World War interfered with the selection of a site for this institution, and the hospital at Carville, Louisiana, was not opened until 1921. It was enlarged in 1924, so that it now has a capacity of 425 patients, which is estimated to be about half the number of lepers in this country. In 1925 there were 257 patients.

Trachoma Hospitals. Trachoma eradication has been undertaken under the supervision of the Division of Domestic Quarantine since 1912. An intensive survey of the disease was made in eastern Kentucky in that year and, on account of the deplorable conditions discovered, a trachoma hospital was established at Hindman, Knott County, Kentucky, for three years. Another was opened at Jackson, Kentucky, in the spring of 1914 under authority conferred in the sundry civil appropriation act for the fiscal year 1914 (38 Stat. L., 25). In this act the item for preventing the spread of epidemics authorized the President to aid state and local boards in preventing and suppressing the spread of certain epidemic diseases, trachoma being expressly mentioned. In June, 1915, a hospital at Hyden was transferred to London, Kentucky, and on June 30, a fourth hospital was opened at Colburn, Virginia. A fifth hospital was opened at Welch, West Virginia, on October 1, 1915. In September, 1916, the hospital at Hindman, Kentucky, was moved to Pikesville, Kentucky, as Knott County, in which Hindman is situated, had been practically cleared of the disease. While the hospital had been maintained at Hindman, the county health officers had been instructed in methods of diagnosis and treatment. and had become qualified to treat any additional cases that might develop. About this time an additional hospital was opened at Tazewell, Tennessee. The hospitals at Colburn, Virginia, and Lon-

don, Kentucky, were closed toward the end of the fiscal year 1918, as the disease was under control in these localities. A new hospital was opened at Greenville, Kentucky, and on December 13, 1918, a hospital was opened at La Moure, North Dakota. At the close of the fiscal year 1924, trachoma hospitals were in operation at Knoxville, Tennessee; Pikesville, Kentucky; Rolla, Missouri; and Russellville, Arkansas. These hospitals were used as bases for field work. During 1924, trachoma work was carried on in coöperation with state boards of health in twelve states.

Prevention of Interstate Spread of Disease. According to the annual report of the Surgeon General for the fiscal year 1924,[79] the activities of the Division of Domestic Quarantine to suppress epidemics, and to prevent the interstate spread of disease consisted of:

(1) Plague-suppressive measures, (2) activities for the eradication of trachoma, (3) the conduct of studies and demonstrations in rural sanitation, (4) the carrying out of service policies for the prevention of epidemics by assisting state health departments in establishing and improving local health service, (5) the improvement of sanitary conditions in the national parks, (6) the control of water supplies used for drinking and culinary purposes by interstate carriers, (7) supervision over sanitary and health conditions on interstate carriers, and (8) mosquito-control measures along the Texas-Mexican border to prevent the spread of yellow fever, should it be introduced.

For many years the Marine Hospital Service had been active in assisting local authorities in the South in controlling epidemics of yellow fever, but the first effective measure in the direction of the interstate control of disease was passed in 1890.

The act of March 27, 1890 (26 Stat. L., 31), gave authority for regulations to prevent the spread of cholera, yellow fever, smallpox, and plague from one state or territory to another. These regulations were to be prepared by the Supervising Surgeon General of the Marine Hospital Service, and a violation of the regulations was made a misdemeanor, punishable by fine or imprisonment. It should be noted especially that this applied only to the four diseases mentioned, and did not confer any general power with respect to other communicable diseases. The authority for the work

[79] Page 65.

now carried on is conferred by the act of February 15, 1893 (27 Stat. L., 449), which provides that the service shall

. . . coöperate with and aid state and municipal boards of health in the execution and enforcement of the rules and regulations of such boards and in the execution and enforcement of the rules and regulations made by the Secretary of the Treasury to prevent the introduction of contagious or infectious diseases . . . into one state or territory or the District of Columbia from another state or territory or the District of Columbia; . . . and . . . where such regulations are, in the opinion of the Secretary of the Treasury, necessary to prevent the introduction of contagious or infectious diseases . . . into one state or territory or the District of Columbia from another state or territory or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under authority of the state or municipality which, in the opinion of the Secretary of the Treasury, are not sufficient to prevent the introduction of such diseases . . . into one state or territory or the District of Columbia from another state or territory or the District of Columbia, the Secretary of the Treasury shall, if in his judgment it is necessary and proper, make such additional rules and regulations as are necessary to prevent the introduction of such diseases . . . into one state or territory or the District of Columbia from another state or territory or the District of Columbia, and when such rules and regulations have been made they shall be promulgated by the Secretary of the Treasury, and enforced by the sanitary authorities of the states and municipalities, where the state and municipal health authorities will undertake to execute and enforce them; but if the state or municipal authorities shall fail or refuse to enforce said rules and regulations the President shall execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

It should be noted that this act does not attempt to create machinery for the prevention of the interstate spread of diseases if the work of state and municipal authorities accomplishes this purpose. It is only when the local regulations are inadequate, or when a distinctly national problem is involved, that the Federal power is invoked. Recognizing that the method outlined in the law is one productive of the best results, the Public Health Service has confined its activities to the formulation of regulations governing the interstate transportation of commodities and persons, the upbuilding of divisions of communicable diseases and sanitary

engineering in state health departments, the giving of advice and assistance to local authorities, and the formulation of regulatory measures only when the local regulations or resources are inadequate to meet the situation.

Regulations affecting interstate carriers provide that vehicles and vessels must be cleaned, ventilated, and supplied with adequate toilet facilities; that forecastles of vessels must be fumigated; that clean bedding must be furnished; that spitting must be prevented except into receptacles provided for that purpose; that common drinking cups and towels must not be used; that drinking water and ice of a definite standard must be provided; and that all articles of food and drink must be obtained from a source free from infection. Carriers are forbidden to transport in interstate traffic milk from an infected source, oysters or clams grown or handled under insanitary conditions, shaving or lather brushes manufactured under insanitary conditions, or any article known to have been exposed to contagion, unless a certificate has been obtained from the proper health authority that all necessary measures have been taken to render the article free from infection. From March 15 to June 15, cattle, horses, sheep, goats, elk, deer, or hogs cannot be shipped from any locality where Rocky Mountain spotted fever is known to exist unless the shipment is accompanied by a certificate that the animals are free from wood ticks. The transportation of persons suffering from plague, cholera, yellow fever, smallpox, typhus fever, scarlet fever, poliomyelitis (infantile paralysis), Rocky Mountain spotted or tick fever, and epidemic cerebrospinal meningitis, is prohibited. Specific regulations are provided governing the transportation of persons suffering from typhoid fever, diphtheria, whooping cough, measles, tuberculosis, leprosy, and venereal disease. The only general regulation, in addition to those affecting interstate carriers, is the one providing that camps of migratory workers must be kept in a proper sanitary and vermin-free condition.

The control over water for drinking purposes used by interstate carriers is effected by requiring the carrier to use water from a source which is certified and approved as producing water of satisfactory quality and safety. These certificates may be issued by officers of the Public Health Service or by the state department of health having jurisdiction over the supply, and must be filed

whenever the Surgeon General of the Public Health Service may direct, but at least semi-annually, in March and September of each year. These certificates are based upon the relative freedom of the water " from contamination or exposure to contamination, by micro-organisms and substances recognized as harmful or deleterious to the consumer's health or liable to spread infectious or contagious disease, as determined through a survey of the sanitary conditions under which the supply is produced and the results of bacteriological and chemical analysis of samples of the water." [80]

During the fiscal year 1924 interstate railroad carriers obtained water for drinking purposes from 2789 sources of supply, of which 1712 were found satisfactory and seventy-three polluted. No determination was made of the character of the water from the remaining sources. As interstate carriers generally use municipal water supplies, the supervision of the water used by them often indirectly results in improvement in the character of the water used by municipalities. In addition, 244 water supplies of vessels were examined, of which 134 were found satisfactory and were accordingly certified.

Sanitary Engineering. As the most effective method of preventing the interstate spread of disease is to eliminate sources of infection within the states, the Public Health Service has supported the state authorities in establishing and developing divisions of sanitation for the study of water, sewage, and other public health engineering problems. The Public Health Service assists in building up the engineering work of the public health departments of the states by furnishing the services of trained sanitary engineers for temporary periods. These officers make specific investigations of water supplies and sewage disposal problems, and organize or make recommendations regarding the establishment of sanitary engineering divisions. The aim of the Public Health Service is not to work out all the problems involved in local sanitary measures, but to render assistance in planning the most urgent work and to point out the desirability of having a definite organization to carry on such work continually. Very largely as a result of the work done by officers detailed from the

[80] Amendment No. 8 to Interstate Quarantine Regulations, July 14, 1919.

Public Health Service, sanitary engineering divisions were in 1925 in existence in forty-one states.

In order to carry on sanitary engineering activities effectively, six interstate sanitary districts have been set up throughout the country, with sanitary engineers in charge of the work in each district. These engineers supervise the water supplies of vessels and railroads, investigate typhoid fever, coöperate with state and local health departments, carry on rodent surveys and anti-plague measures, and perform various miscellaneous or special duties. Thus, during 1925, extensive studies of oyster pollution were conducted in certain seaboard states, on account of an epidemic of typhoid fever from that source. The sanitary engineers of one district assist in the sanitation of the national parks, being detailed at the request of the Secretary of the Interior.[81]

Rural Sanitation. Special studies of and demonstration work in rural sanitation were started in the fiscal year 1914. During the fiscal years 1914, 1915, and part of 1916, allotments for this work were made from the appropriation for "Field Investigations of Public Health." The first specific appropriation for this work was one for $25,000 in the deficiency act for the fiscal year 1916, approved February 28, 1916. Beginning with the fiscal year 1917, specific annual appropriations were made for this work in the following amounts:

1917	$ 25,000
1918	150,000
1919	150,000
1920	50,000
1921	50,000
1922	50,000
1923	50,000
1924	50,000
1925	74,300
1926	75,000

As a result of special studies made in 1914, 1915, and 1916, in eighteen counties in sixteen states, the conclusion was reached:

(1) That at less than 2 per cent of the rural homes in the United States are the most essential principles of sanitation consistently in practice; (2) that for less than 3 per cent of our rural population is local health service approaching adequacy provided;

[81] See page 285.

(3) that sustained efficient whole-time local health service is essential to the establishment and maintenance of reasonably good sanitary conditions in our rural districts; and (4) that duly efficient personnel for rural health work generally cannot be expected without active participation in the work by central agencies, such as official State and National health agencies, to prevent adverse influence of local politics.[82]

Since 1916 the work in rural sanitation has been devoted almost entirely to demonstrating the value of proper sanitary measures and endeavoring to arouse interest in public health work.

During the war the work in rural sanitation was largely confined to areas adjacent to military reservations, but after the military forces were demobilized regular work was again resumed. This work is undertaken only at the request of the state or local health authorities, and beginning with the fiscal year 1918 the appropriation acts have specified that no part of the appropriation shall be used for demonstration work unless the state, county, or municipality agrees to pay half of the expense.

During the fiscal year 1925, the Public Health Service coöperated in demonstration projects in rural health work in seventy-nine counties, or districts comparable to counties, in nineteen states.[83] For the support of all this work, there was available $708,909.30, of which sum, $63,314.47 came from the Federal appropriation of $74,300 for the fiscal year; $569,510.66 was derived from state, county, and municipal government sources; and $72,084.17 came from other funds, mostly extra-governmental, such as the International Health Board, Red Cross Chapters, and voluntary health associations. "Thus, this investment of the Federal funds appropriated for rural sanitation work was met by odds of over 9 to 1."

The results of these activities, as summarized by the officer in charge of the rural sanitation office of the Service, may be quoted verbatim, as follows:

The 79 coöperative projects in the fiscal year ended June 30, 1925, yielded results exceeding in value manyfold the cost of the work. Among the activities and results presented in the tabular

[82] Surg. Gen., Annual Report, 1920, p. 52.

[83] Lumsden, L. L., Coöperative rural health work of the Public Health Service in the fiscal year 1925. Public Health Service, Public Health Reports, Oct. 23, 1925.

statement, to which especial consideration may be given, are the following:

1. Public lectures presenting the principles and details of sanitation to over 307,700 persons.

2. Over 166,600 sanitary inspections of premises, with explanation of findings to occupants or owners of the properties.

3. Physical examination of over 197,200 school children, of whom over 112,000 were found to have incapacitating physical defects, with notification to parents or guardians of defects found.

4. Thirty-five thousand five hundred and twenty-four recorded treatments effecting correction of incapacitating physical defects among school children. These were brought about by written notification of defects found to parents or guardians, follow-up visits to home of the children, making available proper clinical facilities, and other activities of the county or district health departments.

5. Bringing about treatments for correction of serious physical defects in 1175 infants and 1897 pre-school children.

6. Treatments to correct iodine deficiency in 4022 persons in endemic goiter districts.

7. Forty-three thousand three hundred and ninety-one visits to homes of cases of communicable disease to advise and show the afflicted households how to prevent spread of the infections.

8. Six thousand five hundred and twenty-four visits by health nurses to prenatal cases to advise and assist expectant mothers in carrying out hygienic and physiological measures making for healthy mothers and healthy babies.

9. Instruction of 2205 midwives in cleanly and careful methods.

10. Twenty-three thousand six hundred and forty-three infants and children of pre-school age examined and over 39,800 home visits by health nurses or health officers to demonstrate hygienic measures for the promotion of the health and the protection of the lives of infants.

11. Seventy-one thousand one hundred and fifty-six persons inoculated for protection against typhoid fever.

12. Forty-seven thousand four hundred and eighty-eight persons vaccinated against smallpox.

13. Nineteen thousand and eighty-nine children inoculated with toxin-antitoxin mixture for immunization against diphtheria.

14. Forty-two thousand and seventeen cows tuberculin tested, with elimination of reactors from herds to prevent communication of bovine tuberculosis to persons through the medium of milk.

15. Four thousand six hundred and fifty-four persons treated effectively for relief from hookworm disease and for the prevention of the spread of the infection.

16. Marked reduction in the spread of malaria in hundreds of localities, with an aggregate population of several hundred thousand.

17. Twenty-nine thousand two hundred and fifty-one treatments to rid persons of venereal disease infection and prevent the spread of the infection.

18. Special examination of 3660 persons for tuberculosis, of whom 1108 were found with an active tubercular process and were advised to place themselves in the care of their private physicians and to carry out hygienic measures. Three hundred and forty-two of the positive cases were sent to institutions maintained in whole or in part for the treatment of tuberculosis.

19. Eleven thousand seven hundred and sixty cases of dangerous communicable diseases quarantined to prevent the spread of infection in the local community, the state, and throughout the country.

20. The installation of 17,415 sanitary privies and 1256 septic tanks at dwellings where previously there had been either grossly insanitary privies or no toilets of any sort.

21. Twelve thousand three hundred and seventy-five privies repaired so as again to be of sanitary type.

22. Six thousand eight hundred and thirty-nine homes connected for the first time with sanitary sewers.

23. Six thousand seven hundred and eighty homes provided with safe water supplies in place of contaminated water supplies.

24. Radical improvement of 409 public milk supplies, the milk from which was being distributed to a considerable extent through the channels of interstate commerce, to prevent the spread, through milk and milk products, of such infections as typhoid fever, scarlet fever, diphtheria, tuberculosis, septic sore throat, and infant diarrhea.

25. Twenty-three thousand six hundred and twenty-two adult persons (most of them over 40 years of age) examined and advised about measures to conserve their health and prolong their lives.

Such activities and results indicate that the plan of the work is both comprehensive and effective. They mean prevention of premature human death, prevention of human illness, promotion of human health, conservation of economic resources. The total result of such work stands in importance to our national welfare second to none other obtainable from equivalent investment of public funds.

Foreign Quarantine. The quarantine work of the Public Health Service begins in the foreign port from which the ship sails, as every vessel departing for the United States must obtain a bill of health from the consular officer or the medical officers detailed to that port. This bill of health contains information regarding the sanitary condition of the vessel and the port, a statement of pre-

vailing diseases at the port, and information regarding cases and deaths from certain infectious diseases. At a foreign port where a medical officer is stationed and where cholera, yellow fever, plague in men or rodents, smallpox, or typhus fever prevail, all vessels must be inspected before the bill of health is issued. At other ports the inspection is limited to vessels carrying steerage passengers, and if the ports are healthful, the inspection may be limited to the steerage passengers and their quarters on the ship.

The regulations provide that vessels must be mechanically clean in all parts, that any part exposed to communicable disease must be disinfected, that air space, ventilation, food and water supply, and hospital accommodations are in accordance with law, and that infected articles must be disinfected.

The United States has, of course, no direct authority to inspect vessels in foreign ports, but this end is accomplished by providing that no vessel from a foreign port shall be allowed to enter a United States port unless it has obtained a bill of health from the proper United States officer.

On arrival of a vessel in an American port, the bill of health is examined by the quarantine officer, who also makes an inspection of the vessel, the passengers, and the crew. If a contagious disease exists on the vessel, the quarantine officer detains the vessel or requires the fumigation or disinfection of the ship, passengers, crew, or cargo as the circumstance may warrant. At border stations the same procedure is carried out as regards passengers and baggage. The fumigation of the forecastles of American merchant ships is also under the direction of the Public Health Service, under authority conferred by the Seamen's Act of March 4, 1915 (38 Stat. L., 1116).

During the fiscal year 1925, officers of the Public Health Service were stationed at forty-three ports abroad and at 101 stations in this country. There were inspected 19,731 vessels and 1,715,936 passengers and members of crews at the continental maritime stations, and 2867 vessels and 369,701 individuals at insular stations. At foreign ports 7212 vessels and 821,019 passengers and members of crews were examined. At the border quarantine stations 49,694 travelers were inspected.

Medical Inspection of Aliens. The medical inspection of immigrants was begun by the Service in the early part of 1890, when

this work was undertaken at New York, by direction of the Secretary of the Treasury under the provisions of the act of August 3, 1882 (20 Stat. L., 214). The act of March 3, 1891, made more specific provision for the medical examination of aliens, and placed this duty definitely on the Marine Hospital Service. The inspection of immigrants at foreign ports was begun in 1889. A second act providing for the medical examination of aliens was passed on March 3, 1903 (32 Stat. L., 1213). The authority for this work at the present time is contained in Sections 3 and 16 of the act of February 5, 1917 (39 Stat. L., 875). The classes denied admission by Section 3 are "idiots, imbeciles, feeble-minded persons, epileptics, insane persons, persons who have had one or more attacks of insanity at any time previously, persons of constitutional psychopathic inferiority, persons with chronic alcoholism, . . . persons afflicted with tuberculosis in any form or with a loathsome or dangerous contagious disease, [and] persons not comprehended within any of the foregoing classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such physical defect being of a nature which may affect the ability of such alien to earn a living." This work includes the medical examination of all alien seamen, regardless of whether they desire to land or not.

Section 16 requires the physical and mental examination of arriving aliens to be made by medical officers of the Public Health Service, who have had two years' experience in the practice of their profession since receiving the degree of doctor of medicine. If, however, medical officers of the Public Health Service are not available, civil surgeons may be employed by the Commissioner General of Immigration, who has general supervision over the admission of immigrants and has direct charge of all examinations that are not physical or mental.

It is the function of the proper immigration officers of the Department of Labor "to determine whether an alien may belong to any one or more than one of the excluded classes."[84] It is the duty of medical officers of the Public Health Service to submit to the immigration officers evidence of two kinds: (1) Certification as to findings of fact, and (2) testimony in the form of profes-

[84] Regulations governing the Medical Inspection of Aliens, Public Health Service, Miscellaneous Publication No. 5, 1917, p. 6.

sional opinions. For instance, the question whether an alien has a particular defect or disease "is purely medical and is therefore for the medical officer to determine; the question of the effect of such a disease on the alien's earning capacity is a practical one, and therefore for the immigration officer to determine, although such immigration officer may desire, and having obtained, may consider an expression of opinion by the medical officer on the practical phase of the matter." [85]

The specific duties of the medical officers are defined in the regulations of the service as follows: [86]

9. To conduct physical and mental examinations of all arriving aliens, including alien seamen subject thereto, and to certify for the information of the immigration officers and boards of special inquiry any and all physical and mental defects and diseases. [Secs. 16 and 35, act Feb. 5, 1917.]

10. To furnish the required information in such form as to enable the proper immigration officers to determine whether the alien concerned belongs to one of the excluded classes. [Secs. 3 and 17, act Feb. 5, 1917.]

11. To convene medical boards for the consideration of appeals made in the cases of aliens certified for insanity or mental defect; also in other cases as provided for by these regulations.

12. To submit such opinions as may be necessary to assist the Secretary of Labor in determining whether certain penalties shall be imposed in connection with the certification for certain classes of physical and mental diseases and defects in cases of arriving aliens. [Secs. 9 and 35, act Feb. 5, 1917.]

13. To certify, when requested and when the facts so justify, that an arriving alien who has been excluded is helpless from sickness, mental or physical disability or infancy, in order that the deportation of an accompanying alien may be effected. [Sec. 18, act Feb. 5, 1917.]

14. To certify, when the facts so justify, that an excluded or deportable alien is in need of special care and attention or of the services of a special attendant.

15. When requested by the proper immigration officers to submit in writing for the information of the Secretary of Labor estimates as to the probable length of time medical treatment may be necessary to effect a cure in cases of arriving aliens who may be adjudged to have come to the United States in violation of law. [Sec. 18, act Feb. 5, 1917.]

16. To render when necessary a certificate in regard to the condition of insane aliens which will enable them to be held for treat-

[85] *Ibid.*, p. 8.
[86] *Ibid.*, p. 10-12.

ment at the expense of the United States until they may be safely deported. [Sec. 18, act Feb. 5, 1917.]

17. To render opinions when requested by the proper immigration officers as to the curability of a "contagious disorder" affecting the wife or minor children of a domiciled alien or certain minor children of a citizen. [Sec. 22, act. Feb. 5, 1917.]

18. To give an opinion as to the age of an alien, when requested to do so by the proper immigration officers. [Sec. 3, act Feb. 5, 1917.]

19. To render opinions, when requested to do so by the proper immigration officers, as to whether an alien may be "physically capable of reading."

20. To designate to the proper immigration officers such aliens as may be in need of hospital care and treatment, as provided under the law and these instructions, and to recommend their transfer to hospital or other suitable place and there supervise or conduct such care and treatment as may be necessary. [Sec. 18, act Feb. 5, 1917.]

21. To designate to the proper immigration officers such arriving aliens as it may be necessary to transfer to hospitals for the purpose of completing their medical examination. [Sec. 16, act Feb. 5, 1917.]

22. Upon the request of the proper immigration officers, and in accordance with such special departmental authority as may be necessary, to determine the physical and mental condition of aliens charged with being unlawfully in the United States, and who have been taken into custody by the immigration officers under departmental warrants of arrest. Also, when requested, to submit in writing for the information of the Secretary of Labor estimates as to the length of time that medical treatment may be needed in such cases. [U. S. Immigration Regulations.]

23. To conduct the physical and mental examination of aliens along the borders of Canada and Mexico, subject to such special rules and arrangements as the Commissioner General of Immigration, with the approval of the Secretary of Labor, may prescribe. [Secs. 10 and 23, act of Feb. 5, 1917.]

The number of alien passengers examined by officers of the Public Health Service during the past five years (fiscal) is as follows:

1921	1,137,682
1922	586,228
1923	745,515
1924	938,928
1925	545,472

In addition to the passengers, 874,962 alien seamen were examined in 1924 and 854,915 in 1925.

Control of Venereal Diseases. The interest of the Public Health Service in the control of venereal diseases has been said by officers of the Service to date back a good many years. The 1875 annual report of the Surgeon General of the Marine Health Hospital Service, for instance, contains pertinent information on the subject. The Public Health Service has also prepared the medical regulations for the inspection of arriving aliens and the government's interest in venereal disease control in this respect is reflected in provisions in these regulations which were in effect for years before the commencement of the late war. The fuller participation of the Federal Government in the control of venereal diseases was, however, promoted by the revelations of the World War.

Early in 1918 the Public Health Service urged the state boards of health to make specific provision for the control of persons afflicted with venereal diseases. By June 30, 1918, twenty-four states had made arrangements with the Public Health Service to have a Service officer take charge of venereal-disease control in coöperation with the state health department.

In order to perfect organization and to supply additional funds, a bill was drafted and introduced into the Senate as Senate Bill 4608. This bill, with some changes, was incorporated in Chapter XV of the army appropriation act for the fiscal year 1919, approved July 9, 1918 (40 Stat. L., 1886).[87]

Section 3 of this act provided for the creation of a Division of Venereal Diseases of the Public Health Service, while Section 4 described the duties of this division to be

> (1) to study and investigate the cause, treatment, and prevention of venereal diseases; (2) to coöperate with state boards or departments of health for the prevention and control of such diseases within the states; and (3) to control and prevent the spread of these diseases in interstate traffic: *Provided,* That nothing in this chapter shall be construed as limiting the functions and activities of other departments or bureaus in the prevention, control, and treatment of venereal diseases and in the expenditure of moneys therefor.

Section 7 provided $200,000 for the establishment and maintenance of the division during the fiscal year 1919. The same amount

[87] For more detailed review of history of this legislation see pages 110-114.

was appropriated in subsequent sundry civil appropriation acts for the fiscal years 1920, 1921, and 1922, but in 1923 this sum was reduced to $175,000, in 1924 to $127,353, in 1925 to $124,000, and in 1926 to $75,000.

Section 6 of the act of July 9, 1918, appropriated $1,000,000 for each of the fiscal years 1919 and 1920 to be paid to states for the use of boards or departments of health in the prevention, control, and treatment to venereal diseases. This sum was to be allotted to each state, in accordance with rules and regulations to be prescribed by the Secretary of the Treasury, in proportion to the population. For the fiscal year 1920 it was provided that each state should specifically appropriate or set aside for the prevention, control, and treatment of venereal diseases, an amount equal to the money allotted by the United States. In a later act $450,000 was appropriated for the fiscal year 1921 (41 Stat. L., 888) in addition to the unexpended balance for the fiscal year 1920. No appropriation was made for the fiscal year 1922, but for the fiscal year 1923 the sum of $250,000 was appropriated to the Public Health Service for allotment to the states in coöperative work in the prevention and control of venereal diseases, and for 1924, $100,000 was appropriated. In 1925 only $25,000 was allowed for state aid, and no appropriation was made for this purpose in 1926.

The act of July 9, 1918, created also the Interdepartmental Social Hygiene Board, consisting of

> The Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury as ex officio members, and of the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Public Health Service, or of representatives designated by the Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury, respectively.

An appropriation of $100,000 for each of the fiscal years 1919 and 1920 was made to the Board to be paid to scientific institutions for discovering more effective medical measures in the prevention and treatment of venereal diseases. The Board also received an appropriation of $300,000 for each of the years 1919 and 1920, to be paid to suitable institutions for the purpose of discovering and developing more effective educational measures in the prevention of venereal diseases and for the purpose of sociological and psy-

chological research related thereto. A later act (41 Stat. L., 888) appropriated $85,000 for medical research and $250,000 for educational research for the fiscal year 1921, with the limitation that the institutions receiving the grants must set aside a similar amount for the same purpose. No appropriation for medical or educational research was provided for the fiscal year 1922.

Section 5 of the act of July 9, 1918, appropriated $1,000,000 for the fiscal year 1919 to be expended under the joint direction of the Secretary of War and the Secretary of the Navy " for the purpose of assisting the various states in caring for civilian persons whose detention, isolation, quarantine or commitment to institutions may be found necessary for the protection of the military and naval forces of the United States against venereal disease." The administration of this fund was placed in the hands of the Interdepartmental Social Hygiene Board by these two secretaries. The balance of this appropriation unexpended on June 30, 1919, was by a later act (41 Stat. L., 178) reappropriated for the fiscal year 1920. The sundry civil appropriation act for the fiscal year 1921 appropriated the unexpended balance and $150,000 additional for similar purposes during that year (41 Stat. L., 888).

For the fiscal year 1922 there was appropriated, $200,000 for assisting the states in protecting the military and naval forces against venereal diseases, and $25,000 for the expenses of the Board.[88] No appropriation has been made for the Interdepartmental Social Hygiene Board since. On June 20, 1923, the President issued the following Executive Order, though whether he had the power to do so has been queried by supporters of the Board:

It is hereby ordered and directed that the Chairman of the United States Interdepartmental Social Hygiene Board, effective July 1, 1923, relinquish and transfer to the United States Public Health Service, Treasury Department, all files and records, together with the filing cabinets in which said files and records are now contained, and that upon such relinquishment and transfer the United States Interdepartmental Social Hygiene Board shall cease and be at an end.

[88] For account of the work of this Board see Manual for the various agents of the Interdepartmental Social Hygiene Board, 1920, and Annual Report.

To sum up, it may be stated that the Interdepartmental Social Hygiene Board made grants of money to universities and associations for carrying on medical and educational researches concerning the venereal diseases, and exercised supervision over the work resulting from the appropriation for assisting the states in caring for civilian persons whose detention, isolation, or quarantine, or commitment to institutions might be found necessary to protect the military and naval forces against venereal diseases; the Division of Venereal Diseases of the Public Health Service was authorized by law to study and investigate the cause, treatment and prevention of venereal diseases, to coöperate with state departments of health in the control of these diseases, and to control and prevent the spread of these diseases in interstate traffic.[89] The activities of the Interdepartmental Board, aside from making grants of money to colleges, institutions, and organizations for medical and educational research, consisted chiefly in the promotion of so called social-protective measures in the interest of the military and naval forces. The funds appropriated under Section 5 of the act of July 9, 1918, to be expended under the joint direction of the Secretary of War and the Secretary of the Navy, were used to defray the expenses of this vice-repressive program.

Scientific Research. Scientific research is one of the most important activities of the Public Health Service and is conducted under the general supervision of the Division of Scientific Research. The subjects investigated include "at least some phase of all or nearly all of the major public health problems which confront the Nation and in which further research has been required for their practical solution."[90]

During 1924 studies were made of cancer, clonorchiasis, food poisoning, goiter, influenza, malaria, pellagra, Rocky Mountain spotted fever, and typhus fever. Research has also been carried on in industrial hygiene and sanitation, public health administration, milk control, child hygiene, mental hygiene, stream pollution, excreta-disposal, and leprosy. A statistical office is maintained in the Division and the Hygienic Laboratory conducts much additional noteworthy research.

[89] For detailed outline of activities of Division of Venereal Diseases, Public Health Service, see page 135.

[90] Surg. Gen., Annual Report, 1924, p. 11.

A report on the cancer studies was issued in 1925. This consisted of an analysis of the cancer mortality in the ten states which formed the original registration area for deaths in 1900, and showed that there has been a real increase since that year of the cancer mortality in those states. Studies of cell growth and cancer are also under way. The goiter study has included a survey of thyroid deficiency in about 50,000 school children in Cincinnati. The investigation of the epidemiological aspects of influenza has included the collection of data regarding respiratory affections from about 12,000 students in universities, and 900 families of medical officers of the Army, Navy, and Public Health Service. The Rocky Mountain spotted fever work was performed at Hamilton, Montana, and also at the Hygienic Laboratory.

Studies of malaria have been conducted by the Public Health Service for the last ten years, the objective being the control of this incapacitating disease in the United States. Headquarters for the work, which includes the epidemiology of the disease, rural malaria control, control of man-made malaria, fish control of malaria, life habits of malaria mosquitoes, and mosquito control, are at Memphis, Tennessee. The prevalence and distribution of the malady, its engineering control, drainage problems, habits of mosquitoes and other entomological features, and fish control have all been considered.

Studies on pellagra, a disease shown by the investigations to be due to a deficiency in dietary factors, have been carried on consistently for nearly two decades, and original and important data have been developed. Field investigations have recently been made in Georgia, and laboratory studies have been conducted at the Hygienic Laboratory.

Industrial Hygiene and Sanitation. The study of occupational diseases and industrial hygiene was first undertaken during the fiscal year 1914 under the general authority conferred by the act of August 14, 1912 (37 Stat. L., 309), providing for the study and investigation of the "diseases of man and conditions influencing the propagation and spread thereof." The scope of this work has varied somewhat from year to year, investigations being made where the need was considered greatest. During the World War attention was concentrated on the industries directly related to the successful prosecution of the war, and the work included sanitary

surveys of navy yards and of plants making war material, sanitation at shipyards, malaria relief and sanitation at the government explosive plant at Nitro, West Virginia, and a study of poisoning in the manufacture of trinitrotoluol. The following investigations made at various times indicate the general character of this activity:

Hygiene of the garment-workers industry in New York City, including inspection of places of employment, physical examination of employees, and special studies of light and ventilation, with the approval of the city health commissioner and at the request of the joint board of control of the garment trade.

Tuberculosis in Cincinnati industries, at the request of the Anti-Tuberculosis League and the state and city health authorities.

Sanitary survey of Indiana industries employing women, at the request of a commission appointed by the legislature.

Trachoma among steel mill workers at Youngstown, Ohio, at the request of the Secretary of the Ohio State Board of Health.

Mine sanitation, diseases of miners, health conditions in blast furnace plants and steel mills in Pittsburgh district, in coöperation with the Bureau of Mines.

Health conditions surrounding employment of women and hygienic conditions of shop lighting in Wisconsin at the request of the Industrial Commission of Wisconsin.

Health of steel workers.

Medical and surgical care of industrial workers.

Industrial fatigue.

Effect of pneumatic stone cutting tools on health.

Health conditions in electro-chemical and abrasive plants at Niagara Falls with special reference to the employment of women, at the request of the Women in Industry Service of the Department of Labor.

Industrial hygiene at plants at East Chicago, Indiana Harbor, and Kalamazoo.

Occupational hazards in Perth Amboy district, New Jersey, at the request of the Department of Labor of New Jersey.

Survey of health insurance in relation to public health and coordination of health insurance systems with local agencies.

Health hazards of the chemical industry and health of the workers, at the request of a chemical company.

Health hazards in connection with the manufacture and distribution of illuminating gas, at the request of the Bureau of Standards.

Health hazards of the textile industry, at the request of the Department of Labor and Industry of Pennsylvania.

Visual condition of workers engaged in occupations likely to cause eye strain.

Lead poisoning in the pottery industry, at the request of the National Brotherhood of Operative Potters.
Ventilation studies of dusty industries.
Industrial cross section of New York Harbor industries, at the request of the Department of Labor of New Jersey.
Health hazards in the foundry trades.
Skin diseases from oil and ink.
Tellurium as an industrial poison.

Recent investigations have included (1) Studies of occupational health hazards, (2) studies of occupational diseases, (3) studies of the causes of industrial absenteeism, (4) studies of the use of cyanogen chloride as a new fumigation gas, (5) statistical studies, (6) studies of tetra-ethyl lead in gasoline, and (7) coöperation with other government departments and industrial agencies. These have included ventilation, illumination, and dust investigations, fatigue and poisoning studies, posture surveys, and various other activities.

Public Health Administration. In 1921 a committee of the American Public Health Association undertook to have made surveys of the public health practice of the eighty-three largest cities of the United States. The Public Health Service coöperated in this work and in 1923 set up an office of administrative health practice, office space having been provided at the School of Hygiene and Public Health of Johns Hopkins University. In 1923, fifty medical officers and sanitary engineers were assigned to make surveys of the one hundred largest cities of the country. This work was completed by the end of the fiscal year 1924, and the results were being prepared for publication in 1925.

A demonstration in county health work has been conducted in Washington County, Maryland, for several years.

Milk Investigations. Investigations of milk control, which are said to have given a remarkable impetus to the cause of more and better milk, have been carried on for several years under the supervision of a sanitary engineer of the Service, with headquarters at Montgomery, Alabama. The work has included the following:

A continuation of the assistance given the State Board of Health of Alabama in executing the state-wide milk sanitation program previously formulated coöperatively with the Public Health Service.

Assistance to other states in a consulting capacity relative to the problem of state-wide milk sanitation.

Assistance to individual cities in organizing their milk sanitation work.

Further studies of the best method of securing the enactment of milk legislation.

Further studies of the best method of insuring the enforcement of milk legislation.

The continuation of studies for the determination of a plan for rating the milk sanitation status of municipalities.

Study of the occurrence of milk-borne outbreaks.

Studies to determine proper specifications for the design of pasteurization machinery.

Child-Hygiene. The special work of the United States Public Health Service for mothers and children is restricted, by reason of statutory limitations, to research and education. The Service claims, that because of the inter-relation of all health problems, the exercise of the general sanitary and other vested functions of the Service has not been without beneficial effect on the health of this population group. The bearing of the general sanitary work of the Service on child health is, in fact, particularly in evidence when viewed in connection with epidemiological investigations, and the work of the Hygienic Laboratory.

The special child hygiene activities have been largely confined to education and to field studies of conditions subject to improvement by general health protective measures. In general, field investigations have included such studies as the value of dried milk in infant feeding, child health administration, school hygiene, mouth hygiene, physical development, nutritional status, school vision, daylight illumination of class-rooms, the physical and mental status of negro school children in urban and rural districts, and other problems and measures relating to child health promotion and protection. The results of these special studies and investigations are available in the form of official reports and special bulletins.

Mental Hygiene. Investigations relating to mental health have dealt chiefly with the subject of immigration and have been carried on for several years by an officer of the Service specially trained in this subject.

Statistical Research. In addition to the Division of Sanitary Reports and Statistics, which collects morbidity and other data, there is a statistical office in the Division of Scientific Research, which conducts studies and investigations of special scope. These have included studies on the morbidity among industrial workers; morbidity in the general population made at the Washington County demonstration; the trend of mortality in the United States; and various mortality studies.

Stream Pollution. Authority to investigate the pollution of navigable streams and lakes was conferred expressly on the Public Health Service by the act of August 14, 1912 (37 Stat. L., 309). This activity was started in 1913, but was temporarily discontinued in 1917 owing to the necessity of carrying on work directly connected with the war. It was again taken up in the summer of 1919. Prior to 1917 these operations were carried on in three distinct lines: (1) Studies of the pollution of coastal waters, with special reference to the contamination of oyster beds; (2) studies of the biochemistry and treatment of sewage and industrial wastes; and (3) a study of the pollution and natural purification of typical rivers. Preliminary studies were made on the Missouri and Potomac rivers, but the most thorough study has been given to the Ohio. This stream was selected because it presents a fair composite of the problems encountered in the study of stream pollution and purification. This river, like most of the large watercourses, is used for two conflicting purposes: as a convenient and cheap means for the disposal of sewage and industrial wastes, and as a readily available source for domestic water supplies. The representative character of the stream yields results that will be of general as well as of local application.

Laboratory studies are being made of the fundamental factors in stream pollution and natural purification, at an especially equipped laboratory at Cincinnati, and field surveys are being conducted of the municipal sewage disposal plants in order to obtain detailed data regarding the efficiency of these plants and the cost of operation. A collective study of municipal water purification is under way, and a study is also being made of the fundamental factors involved in the pollution and natural purification of the Illinois River. The work on the Ohio River resulted in the estab-

lishment of definite quantitative relations between the pollution of the stream and the basic factors: population, industrial wastes, stream flow, and temperature. The work on the Illinois River has been undertaken in order to test, and, if necessary to modify, the conclusion drawn from the Ohio River investigation. A study of the waters of lower Lake Michigan has likewise been completed.

Hygienic Laboratory Work. The Hygienic Laboratory of the Public Health Service is housed in its own building in Washington, D. C. An annual appropriation of about $44,000 is made for the purposes of this laboratory and, with these limited funds, much valuable research is carried on.

A laboratory for the making of researches and tests in connection with the medical service at the marine hospitals was established in 1887, but general laboratory work was not specifically authorized until the passage of the sundry civil appropriation act of March 3, 1901 (31 Stat. L., 1137), which made an appropriation for the erection of a laboratory "for the investigation of infectious diseases and matters pertaining to the public health." The act of July 1, 1902 (32 Stat. L., 712), provided definitely for the organization and management of the Hygienic Laboratory.

The Hygienic Laboratory is organized into divisions of Pathology and Bacteriology, Zoology, Chemistry, and Pharmacology. The scope of this work can be defined only in general terms, and an enumeration of some of the completed and current studies will best indicate its character. Work in pathology and bacteriology has included tuberculosis research studies of specific immunity and the treatment of experimental tuberculosis in guinea pigs by means of compounds derived from chaulmoogra oil. Studies of pneumonia vaccines have been made to determine the efficiency of the agents now in use and to increase the protective value of these products. Meningitis investigations have comprised technical studies of the bacteria and attempts to improve methods of testing the potency of commercial serums. Anti-rabic vaccine virus for one thousand seven hundred and two treatments was manufactured in one year and sent to state health organizations. In addition thirty-one patients were given the Pasteur treatment.

In the field of pharmacology special attention has been paid to the chemotherapy of syphilis and related diseases. This work

has followed four distinct lines: (1) Biological standardization of commercial arsphenamine and neoarsphenamine, the standard remedies for syphilis; (2) a study of the causes of arsphenamine intoxication and methods of prevention; (3) investigation of the mode of action of the remedies on the parasites; and (4) a study of methods of treating syphilis in the central nervous system. Other work included studies of hookworm remedies, of the food value of dried milk, and of poisoning by trinitrotoluol, and the compilation of comments of the United States Pharmacopœia.

Chemical researches include work on the disposal of chemical wastes, the use of ultra-violet rays in water purification, the use of ozone in ventilation, the composition of reconstructed milk, the detection and estimation of poisonous nitro compounds, the detection and estimation of impurities in arsphenamine and neoarsphenamine, and the determination of the preservatives used in therapeutic serums. A fundamental research into the rôle of oxidation-reduction phenomena in the biology of public health is in progress.

In the field of zoology the work has included studies of human excreta, the continuance of the preparation of the index to medical and veterinary zoology, and examinations for intestinal parasites.

Among special investigations of the last five years have been studies of tularæmia, tuberculosis, pneumonia, malta fever, trachoma, and narcotic drug addiction. Students sent by the health section of the League of Nations and from other sources have been stationed at the Laboratory at various times.

Control of Biologic Products. The tests of biologic products applicable to the diseases of man and the licensing of manufacturers are carried on under authority of the act of July 1, 1902 (32 Stat. L., 728). This act provided for a board composed of the Surgeon General of the Army, the Surgeon General of the Navy, and the Supervising Surgeon General of the Marine Hospital [Public Health] Service, which was given authority, subject to the approval of the Secretary of the Treasury, to promulgate regulations governing the licensing of establishments engaged in the "propagation and preparation of viruses, serums, toxins, antitoxins, and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia," or to be carried or sold in interstate or foreign commerce. The act makes

it unlawful to transport or sell in interstate or foreign commerce any such preparation unless it has been prepared at an establishment licensed by the Secretary of the Treasury, and unless each package is marked with the name and license number of the manufacturer and the date beyond which the contents can not be expected to yield "their specific results." The execution of the act was placed in the hands of the Secretary of the Treasury, whose agents were given power to inspect the premises of any establishment manufacturing these products. All of the tests and inspections have been made by the Public Health Service, which in recent years has had specific appropriations for this work.

The first regulations under this act were promulgated February 21, 1903, and as the law required an interval of six months before the regulations became effective, they were not in force until August 21, 1903. Since that time this work has been carried on continuously in the Hygienic Laboratory of the Service.

Before a license is granted, a medical officer detailed as inspector visits the establishment manufacturing the product and reports on the sanitary and technical conditions observed. In case application is made for a license for a new product, laboratory or clinical tests are made when practicable to determine whether the agent has any therapeutic or prophylactic value. A report is made to the Surgeon General, and if the conditions in the manufacturing plant are satisfactory, if the product passes certain tests, and in some cases the Service believes that the product has prophylactic or therapeutic value, a recommendation is made to the Secretary of the Treasury that a license be issued. This license is effective for one year unless revoked for faulty methods of preparation, faulty construction or administration of the establishment, or impurities or lack of potency, where a potency test is feasible, or products which may be disclosed by laboratory examination. Samples of the various products are purchased from time to time in the open market and examined in the Hygienic Laboratory for both purity and potency.

The examinations of biologic products are made with the view of determining their purity and, in some cases, their potency. The determination of purity is a comparatively simple technical process, but considerable original work was necessary to establish standards by which to measure potency. One of the first steps taken by

the Hygienic Laboratory after the passage of the act of July 1, 1902, was to duplicate the unit for measuring the strength of diphtheria antitoxin established and made by Ehrlich at his laboratory at Frankfort-on-the-Main.[91]

The necessity for a similar standard for measuring the dosage of tetanus antitoxin was early recognized, and after much highly technical work a satisfactory standard was prepared. Prior to the adoption of this unit there were as many standards as there were manufacturers. The variation in the units is shown by the fact that one serum claiming six million units per cubic centimeter showed only ninety units according to the Service standard, while another serum claiming only seventy-five units per cubic centimeter showed seven hundred and sixty-nine units to the new standard.[92]

Standards of potency have been developed for certain other products of this character, and this work is being continued.

Since November 30, 1917, the Service has paid particular attention to the control of the remedy for syphilis previously known under the trade name "Salvarsan," "606," "arsenobenzol," and "arseminal." This was a German product which was protected by patents and which had been manufactured to only a small extent in this country under license from German owners of the patent. The Trading with the Enemy Act, approved October 12, 1917 (40 Stat. L., 420), gave the President power to authorize the use of patents owned by enemy subjects, and on the same date the President issued an executive order vesting in the Federal Trade Commission, the power to grant licenses for the manufacture of products covered by enemy owned patents. In accordance with this authority the Federal Trade Commission gave the name "arsphenamine" to these products, and all licenses for their manufacture required compliance with such rules and standards as might be established by the Public Health Service. In addition to routine tests, studies were made of methods of manufacture in order to overcome some of the difficulties. As a result the manufacturers were able to increase their output and produce a drug of a higher quality.

Regulations governing the manufacture and sale of arsphenamine, neoarsphenamine, and sodium arsphenamine, were approved

[91] Surg. Gen., Annual Report, 1920, p. 375.
[92] *Ibid.*, pp. 26-52.

by the Secretary of the Treasury June 21, 1920, under the authority of the act of July 1, 1902. The importance of the regulation of arsphenamine is evidenced by the fact that six million doses are used in this country each year.[93]

In 1925 licenses were issued to thirty-six establishments making biological products in this country and eleven in foreign countries.[94] During 1924 sterility tests were made on 1315 specimens, and potency tests on 967.

Statistics and Reports. The collection and publication of statistical information was first authorized by the act of April 29, 1878 (20 Stat. L., 37), which provided that consular officers should make reports on sanitary conditions and that the Surgeon General of the Marine Hospital Service should transmit to medical officers of the Service, to collectors of customs, and to state and municipal health authorities, weekly abstracts of the consular sanitary reports and other pertinent information. The act related to quarantine, and the evident purpose was to disseminate information regarding conditions in foreign countries. Bulletins were issued weekly from July 13, 1878, to May 24, 1879. These were published by a manifold process and were not printed until 1881. The act of March 3, 1879 (20 Stat. L., 484), created the National Board of Health to which was assigned the duties pertaining to quarantine and collecting and disseminating information relating to sanitary conditions, the grant of authority to the Marine Hospital Service being repealed. From July 5, 1879, to July 1, 1883, statistical information was published by the National Board of Health.

The provisions of the act of March 3, 1879, were limited to four years, so that the duties of distributing statistical information automatically devolved upon the Marine Hospital Service on March 4, 1883, but the publication of statistics was not resumed until January 27, 1887. This statistical work has been carried on continuously since that time. The weekly publication containing current statistics was known as the Weekly Abstract of Sanitary Reports from 1887 to 1895; since 1895 it has been known as Public Health Reports.

The quarantine act of February 15, 1893 (27 Stat. L., 449), reëstablished the earlier authority to obtain and publish informa-

[93] House Committee on Appropriations, Hearings on sundry civil appropriations bill for 1922, p. 392.

[94] List given in Public Health Reports for May 29, 1925.

tion on the sanitary conditions in foreign countries and in addition directed the Secretary of the Treasury to obtain weekly reports on the sanitary conditions at ports and places within the United States. Both foreign and domestic mortality statistics have been published for some years, but the collection of domestic morbidity statistics was not started until 1906, the first publication of these statistics being on October 19.

At present the statistical material in the Public Health Reports consists of weekly mortality statistics for principal cities (collected by the Bureau of the Census); weekly morbidity reports for communicable diseases for cities, received by mail; weekly morbidity reports for communicable diseases for states, received by telegraph; monthly morbidity reports for states, received by mail; and reports on communicable diseases in foreign countries, received by mail or cable. The telegraphic reports by states are published within one week, and the mail reports by cities within three weeks. At the end of the fiscal year, 1924, weekly telegraphic reports were received from thirty-seven states and monthly mail reports from forty-five states, the District of Columbia, and Hawaii. The state reports contain statistics on the prevalence of the following diseases: anthrax, cerebrospinal meningitis, dengue, diphtheria, influenza, pneumonia, leprosy, measles, poliomyelitis (infantile paralysis), rabies in man, Rocky Mountain spotted (or tick) fever, scarlet fever, smallpox, typhoid fever, and typhus fever.

In the field of morbidity statistics an endeavor is made to obtain weekly reports by mail from all cities which have a population of 10,000 or over. During the fiscal year 1924, reports were received from 564 cities. An endeavor is made to obtain reports of deaths from all causes and of new cases and of deaths from the following diseases: Anthrax, chancroid, gonorrhea, influenza, leprosy, malaria, cerebrospinal meningitis, pellagra, pneumonia, poliomyelitis (infantile paralysis), rabies (in animals), smallpox, syphilis, tetanus, typhoid fever, diphtheria, measles, scarlet fever, tuberculosis, and typhus fever. Weekly statistics are published for all these with the exception of the venereal diseases.

Statistics on foreign countries are published as soon as received or compiled. These are obtained from Public Health Service officers, from American consuls, and from official reports of foreign countries and municipalities.

In addition to the publication of current statistics for use of health officers, the Service also undertakes to analyze available statistics in order to obtain information regarding the incidence of certain diseases and to aid in defining fields in which intensive studies might be made to advantage.

In connection with the morbidity report, studies are made of the following: (1) The report forms actually in use for the purpose of developing a standardized set, (2) the report forms used for certain acute infectious diseases from the point of view of health administration and the collection of epidemiological data, and (3) the possibilities of the statistical use of the data so collected.

In the field of mortality, studies are made of specific mortality rates from certain causes and the trend of mortality from certain important causes.

Current statistics of disease prevalence among sample groups of industrial establishments and employee sick-benefit associations are secured through the coöperation of the plants and associations. The data are compiled, analyzed, and published currently.

In 1925 a morbidity registration area was proposed.[95] More than four thousand collaborating and assistant collaborating epidemiologists in the states are authorized by law to use government "penalty" envelopes in collecting morbidity data. Congress has not as yet seen fit to make a definite appropriation for these statistics.

In addition to its work in collecting data, the Division of Sanitary Reports and Statistics issues annual compilations of new state health legislation, edits the weekly Public Health Reports, sends out health information, and gives radio talks. The Scientific Research Division edits the pamphlets and bulletins of the Service.

Organization. The head of the Public Health Service is the Surgeon General, who, under the direction of Secretary of the Treasury and an Assistant Secretary, is responsible for the supervision of all matters connected with the administration of the affairs of the Service. He is directly assisted by an executive officer, who acts on behalf and by order of the Surgeon General in all matters of routine administration. The detailed work of the Service

[95] See Lloyd, B. J., Plan to establish in the United States a morbidity registration area, Public Health Reports, July 24, 1925.

is carried on by means of the following administrative units, which report directly to the Surgeon General:

Office of Chief Clerk
Inspection Service
Division of Personnel and Accounts
Hospital Division
Division of Venereal Diseases
Division of Domestic (Interstate) Quarantine
Division of Foreign and Insular Quarantine and Immigration
Division of Sanitary Reports and Statistics
Division of Scientific Research

The Office of the Chief Clerk, the Inspection Service, and the Division of Personnel and Accounts are institutional units, as they are concerned entirely with matters relating to the operation of the Service, and do not carry on any of the activities for which the Service exists. These units assist the other units in carrying on their work. The other seven units are functional, as they are concerned with the administration of specific laws or the direction of investigations undertaken by authority of law.

Office of the Chief Clerk. The Office of the Chief Clerk has general supervision over the routine matters connected with the administration of the business of the Service of the bureau organization in Washington. On the personnel side this work includes, for the clerical, messenger, and labor force, the making of appointments, promotions, and demotions, the assignment of employees, granting leaves of absence, enforcing discipline, keeping records of attendance and leaves of absence, and preparation of pay-rolls. Other duties are the administration of a library containing over 10,000 volumes, the furnishing of supplies of all kinds for the bureau in Washington, the care of buildings, the supervising of telephone and motor car service, the custody of the files and archives, the furnishing of stationery and printed forms to both the Washington office and the field stations, the preparation and transmittal of requisitions for printing publications, the execution of multigraph and mimeograph work, and the preparation and custody of mailing lists. It should be noted that the Chief Clerk has no supervision over the Hygienic Laboratory, which is a field station.

During 1924 the number of employees on duty at the Bureau was 261.

Inspection Service. The Inspection Service as an administrative unit was created as a result of the increase in the hospital work during 1919 and 1920, and also because of the very apparent necessity for closer supervision of all of the lines of activity pursued by the Public Health Service. Formerly all charges and complaints were investigated by an officer specially detailed for that purpose, but the increase in number of complaints resulting from the rapid growth of the hospital service led to the creation of an inspection section in the Hospital Division during the early part of the fiscal year 1920. Under this arrangement the Hospital Division had charge of the investigation of all matters relating to hospitals, while officers were specially detailed to make needed investigations of other branches of the Service. The Hospital Division was thus investigating its own operations. It was felt that more satisfactory results would be obtained if an independent agency, reporting directly to the Surgeon General, were established for inspection purposes, and accordingly the Inspection Section was created on February 16, 1920. This was changed to the General Inspection Service by the regulations approved August 29, 1920.

The Inspection Service makes routine inspections of hospitals operated by the Service and other stations and establishments pertaining to the other divisions. In addition to these routine examinations the Inspection Service investigates complaints against any division, establishment, or branch of the Service. The inspector is authorized to take testimony under oath in order to ascertain the truth of the charges. Annual inspections of property reported unserviceable are made by the Inspection Service in order to provide for its disposal.

The Inspection Service is in the charge of an assistant surgeon general, assisted by an executive officer. The Washington office of the Inspection Service is divided into the Section of Records and Correspondence and the Section of Reviews and Reports. The Section of Records and Correspondence has charge of the files of the Service and looks after the clerical details relating to the correspondence. The Section of Reviews and Reports examines the findings of the field inspector in order to determine whether the inspection fully covers the ground and makes recommendations regarding the action to be taken. The work of the field in-

spectors is generally confined to the determination of facts, but the Section of Reviews and Reports drafts recommendations to the Surgeon General regarding the remedial action, disciplinary or other, that should be taken.

There are now two inspection areas, the Eastern and the Western. During 1924, twenty-five marine hospitals, 109 second-, third-, or fourth-class stations; and 165 contract hospitals were under inspection by four officers detailed for the purpose.

Division of Personnel and Accounts. The Division of Personnel and Accounts has charge of the payment of all vouchers, the record of disbursements from various appropriations, and all matters relating to the appointment, promotion, and discipline of commissioned officers, personnel of every character in the field, and the technical and scientific personnel in Washington. In the field, special disbursing officers are stationed at the large centers in order to avoid the delay incident to transmitting vouchers to Washington for payment.

The activity of this Division in the work of personnel administration consists in arranging for the appointment and all changes of status of commissioned officers, employees of every character in the field, and technical and scientific employees in Washington. It also, by direction of the Surgeon General, convenes boards for the examination of applicants for appointment, for the examination of employees entitled to promotion, for the investigation of commissioned officers, and for other purposes.

The Division is in the charge of an assistant surgeon general the organization being as follows:

1. Office of Chief of Division
2. Personnel Section
    1. Medical and Scientific Personnel Unit
    2. General and Technical Personnel Unit
    3. Travel Unit
3. Finance and Accounts Section
    1. Transportation Audit Unit
    2. Voucher Auditing Unit
    3. Payroll Audit Unit
    4. Bookkeeping Unit
4. Property Section

Hospital Division. The Hospital Division has charge of all medical relief except that furnished by the trachoma hospitals and

clinics and the leper hospital at Kalihi, Hawaii. Its work includes the maintenance and operation of Service hospitals, the furnishing of medical relief at other stations of the Service, the placing of patients in contract hospitals, and the making of physical examinations.

The marine hospitals are known as relief stations of the first class. Each hospital reports directly to the Hospital Division. Each hospital is in the charge of a medical officer, who is assisted by a professional and administrative staff.

Marine hospitals are located as follows:

Number and location	Year in which relief activities were begun	Date present hospital was built or acquired	Capacity
1. Baltimore, Md.	1802	1887	167
2. Boston, Mass.	1798	1860	170
3. Buffalo, N. Y.	1873	1909	60
5. Chicago, Ill.	1852	1873	125
6. Cleveland, Ohio	1852	1852	83
7. Detroit, Mich.	1857	1857	80
8. Evansville, Ind.	1856	1892	48
9. Ft. Stanton, N. Mex.	1899	1899	261
10. Key West, Fla.	1840	1845	40
11. Louisville, Ky.	1847	1856	60
12. Memphis, Tenn.	1870	1884	50
13. Mobile, Ala.	1834	1840	80
14. New Orleans, La.	1802	1885	250
15. Pittsburgh, Pa.	1851	1910	60
16. Portland, Me.	1802	1859	42
17. Port Townsend, Wash.	1855	1895	102
18. St. Louis, Mo.	1840	1882	70
19. San Francisco, Calif.	1849	1875	320
20. Savannah, Ga.	1873	1906	85
21. Stapleton, N. Y.	1802	1883	288
22. Vineyard Haven, Mass.	1798	1895	24
43. Ellis Island, N. Y.	1802	1919	340
66. Carville, La.	1921	1921	213
70. New York City	1802	1919	23
82. Norfolk, Va.	1798	1919	217

The Fort Stanton hospital is for the tuberculous and the Carville hospital is for lepers. All the others are for general medical and surgical patients.

Dentistry has been introduced in all the marine hospitals and is also available at twenty-one other relief stations. The Service now has twenty-five full-time dental officers and twenty-nine part-time contract dentists. There is also a nursing section in the Division of Hospitals and Relief, in the charge of a Superintendent of

Nurses, who is likewise in charge of all reconstruction aides, dietitians, librarians, and social service workers. Of four hundred women engaged in these activities, 360 are nurses.

Division of Venereal Diseases. The functions and duties of the Division of Venereal Diseases as imposed by the act of July 9, 1918, are (1) To study and investigate the cause, treatment, and prevention of venereal diseases; (2) to coöperate with state boards or departments of health for the prevention and control of such diseases within the states; and (3) to control and prevent the spread of these diseases in interstate traffic.

The general scope of these duties comprise the following activities:

1. Coöperation with state departments of health for the prevention and control of venereal diseases within the states.

a. Detailing personnel to promote community interest by conferences with local authorities, civic organizations, editors, other public-spirited citizens, nurses, midwives, social and probation workers, for the purpose of ameliorating conditions which facilitate the spread of venereal diseases. Examples of such conditions are: lack of examination and treatment facilities for indigent men, women and children; lack of legal authority and organization of the health department; community, newspaper and institutional disinterestedness; lack of venereal disease publicity; inertia in tracing sources of infection and in coöperating with other communities and states in controlling the travel of infected itinerants.

b. Promoting home and school instruction in fitness and in sex education as an aid in the prevention of venereal diseases.

c. Delivering venereal disease lectures to selected groups, such as industrial, commercial, and domestic employees.

d. Making available to health authorities and, through them, to others, literature, films, exhibits and slides relating to the medical, legal, administrative and socio-economic aspects, for the prevention and control of venereal disease within the states.

2. Studies and investigations of the cause, treatment, and prevention of venereal diseases.

The coöperative work with the states affords concurrent opportunities for the practical study and investigation of the various conditions encountered, and results are utilized by the division in preparing educational facilities and literature for use in its coöperative work.

The division also studies and investigates the literature, laws, reports and conditions in this and other countries relat-

ing to the cause, treatment and prevention of venereal diseases, and it disseminates this information by publications, news releases and by correspondence in special cases.

Clinical studies and investigations are made at the Hot Springs Clinic, and all patients treated there are given special instruction in the necessity for the early detection of the diseases and their prompt and adequate treatment. Such patients are also instructed in the regulations controlling the interstate travel of infected persons, and they are enlisted as venereal disease educators in their respective communities. Sociological studies of this pilgrimage group are carried on, and efforts are made to induce them to continue treatment at their own homes. Reports are made to the health officers and physicians at the patients' homes in order to vouchsafe the continuance of treatment as well as to secure the examination and necessary treatment of members of their families.

3. Control of venereally infected persons in interstate traffic.

Regulations defining conditions under which venereally infected persons may engage in interstate travel are promulgated by the Secretary of the Treasury under authority of the Quarantine Act of 1893. Efforts are made to promote observance of these regulations by coöperation with state and local health authorities, with hospitals frequented by interstate travelers, and with agencies procuring laborers for work in other states.

The Division distributes printed information and instructions concerning procedural methods required in connection with this undertaking.

Division of Domestic (Interstate) Quarantine. The work of the Division of Domestic Quarantine is directed mainly toward the control of the spread of communicable diseases. When a disease is epidemic in any section it is the function of this Division to take such steps as may be necessary to prevent its spread into other states. With the view of preventing the spread of epidemic diseases this division formulates the interstate quarantine regulations which govern the movement of infected persons in interstate travel and looks after their enforcement. Much of the work looking to the sanitation of railroad cars has been taken up in coöperation with the American Railway Association, which has given warm support to all suggestions looking to improved sanitary conditions on railroads. The greater part of the work of this division is devoted to building up and improving divisions of communicable

diseases and sanitary engineering in state health departments. In order to accomplish this purpose, investigations of outbreaks of communicable disease are made at the request of state health authorities by medical officers or sanitary engineers of the Service. The work of this division is entirely in the field of control and the stimulation of the health activities of the states. It does not make any investigations of the causes of and remedies for diseases. Studies of the causes of disease are made by the Division of Scientific Research, the practical application of the preventive measures falling properly within the scope of activity and operations of the Division of Domestic Quarantine.

This division has charge of the trachoma hospitals, clinics, and demonstration work, of the special work for the suppression of plague, of the certification of water supplies for use by interstate carriers, and of the sanitary inspection of certain national parks. An assistant surgeon general is in charge.

Division of Foreign and Insular Quarantine and Immigration. The Division of Foreign and Insular Quarantine and Immigration has charge of quarantine administration and the inspection of immigrants at ports and border stations. In connection with both these activities, medical officers are stationed at foreign ports. Information regarding the prevalence of disease in foreign ports is also furnished by consular officers.

Quarantine officers for the examination of vessels and passengers are stationed at sixty-eight places in the Continental United States, two in Alaska, seven in Hawaii, ten in Porto Rico, three in the Virgin Islands, seven in the Philippines, and thirty in foreign countries. In addition one medical officer is detailed for duty under the Governor of the Panama Canal as chief quarantine officer of the Canal Zone. All officers in charge of quarantine stations report directly to the Chief of the Division of Foreign and Insular Quarantine and Immigration. The equipment and personnel at these stations vary considerably. Important stations have several medical officers, a corps of attendants, and an extensive plant for the detention of passengers and the fumigation of vessels and cargo. At others only a single medical officer is available to make the examination, and to remand the vessel to one of the larger stations if detention or fumigation is necessary.

The fumigation of forecastles on American ships, as required by the act of March 4, 1915 (38 Stat. L., 1166), is under the supervision of this Division.

The medical inspection of immigrants and of alien seamen is carried on at one hundred and ten stations in the Continental United States, at eight in Canada, one in Alaska, and at several in the insular possessions. At some stations where there are few immigrants, the inspection is made by the officer in charge of the quarantine station. At the more important points for the entry of immigrants there is a staff of inspectors. Medical officers engaged in the inspection of immigrants certify their finding to the local commissioners of immigration or to local boards of inquiry. In their reports to the Public Health Service, they correspond directly with the Chief of the Division of Foreign Quarantine and Immigration.

An alien certified for mental defects may appeal to a board of medical officers appointed by the Surgeon General.

The Division of Foreign Quarantine and Immigration is in the charge of an assistant surgeon general. Its work is carried on almost entirely in the field, only seven persons in addition to the assistant surgeon general being employed in the Washington office.

Division of Sanitary Reports and Statistics. The Division of Sanitary Reports and Statistics has charge of the collection of morbidity statistics and the publication of Public Health Reports. The statistics published in Public Health Reports are compiled by this division, but that publication contains also short articles on the cause, prevention, or control of disease, information regarding sanitation and the public health, changes in regulations, and other matters of interest to health officers and physicians. The general articles are contributed by all the other divisions of the Service.

This division receives weekly telegraphic and monthly mail reports of communicable diseases from state boards of health, weekly mail reports on communicable diseases from city health authorities, and mail and cable reports from Service officers and American consuls in foreign countries. Each agency reporting is supplied with cards or forms on which to insert the statistics desired. The reports are reviewed in the Division of Sanitary Reports and Statistics and prepared for publication. In addition to the periodic reports, state health officers and service officers report by telegraph any unusual

occurrence of diseases which may be spread through interstate traffic.

In order to stimulate the collection of accurate statistics, collaborating epidemiologists and assistant collaborating epidemiologists are appointed for states and minor subdivisions respectively. These officers serve at the nominal salary of one dollar a year. Collaborating epidemiologists are state health officers designated by the state health department.

The processes involved in the scheme of collecting morbidity data through collaborating epidemiologists and assistant collaborating epidemiologists are indicated in the following outline:

1. Reports of the occurrence and location of individual cases of communicable diseases by practicing physicians to the assistant collaborating epidemiologists on duty at the local health office, where all the information becomes available for primary use by the local health officer for the control of disease within his jurisdiction.
2. Reports of cases of communicable disease and local health status by the assistant collaborating epidemiologists to the collaborating epidemiologist on duty at the state health office, where the information may be used, in turn, by the state health officer.
3. Reports of cases of disease and general health conditions within states by the collaborating epidemiologists to the Public Health Service.[58]

Statistics and statements on the prevalence of communicable diseases in foreign countries are received by mail and cable from Public Health Service officers and American consuls. These reports go first to the Division of Foreign Quarantine and Immigration, which makes note of any facts that may be of value in connection with the quarantine work or the medical inspection of immigrants. They are then sent to the Division of Sanitary Reports and Statistics, which prepares the material for publication in the Public Health Reports. Data of this character are obtained also from the official publications of foreign countries and municipalities.

The compilation of laws, ordinances, and judicial decisions relating to public health is made in this Division. These items are published in Public Health Reports as received, and later state laws, municipal ordinances, and judicial decisions are brought together in separate compilations.

[58] Surg. Gen., Annual Report, 1920, p. 205.

The Section of Public Health Education of the Division of Sanitary Reports and Statistics distributes the publications of the Service, particularly those designed for the use of the general public. Requests for specific publications are answered by this section, which also supplies information in reply to inquiries in the field of general medicine, sanitation, and hygiene. Technical inquiries on special subjects not covered by the publications of the Service are answered by the division having supervision over the particular class of work.

This section also prepares bulletins for popular use, and disseminates public health information by means of articles given to the press and question and answer columns in newspapers.

The Division is organized as follows:

1. Office of Chief of Division
2. Administrative Section
3. Editorial Section
4. Morbidity Reports Section
    1. United States
        a. Collaborating and Assisting Collaborating Epidemiologists at various places
    2. Foreign
5. Legal Section
6. Section on Public Health Education
7. General Statistical Office

The Division of Sanitary Reports and Statistics is in charge of an assistant surgeon general.

Division of Scientific Research. The Division of Scientific Research has a more elaborate organization than any other division in the Public Health Service, as its work is not confined to one or two specific purposes like that of the other units. Its duties are primarily to investigate the causes of disease and methods of treatment, while the work of the other divisions is primarily to apply the principles developed, as well as those of general medicine and hygiene, to the specific work committed to their care. The work of this division includes the indefinite field described in the act of August 14, 1912 (37 Stat. L., 309), namely, of the "diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution either

directly or indirectly of the navigable streams and lakes of the United States."

With such a wide range of potential activity, the work and organization of the Division vary considerably from time to time, as problems are disposed of and new ones taken up. The outline below shows the organization of the work in progress at present.

1. Office of Chief of Division
2. Hygienic Laboratory
    1. Division of Zoology
    2. Division of Pathology and Bacteriology
    3. Division of Pharmacology
    4. Division of Chemistry
3. Control of Biologic Products
4. Malaria
5. Child Hygiene
6. Industrial Hygiene and Sanitation
7. Nutrition
8. Stream Pollution
9. Mental Hygiene
10. Leprosy Investigation Station
11. Studies of Public Health Administration
12. Morbidity statistics
13. Rocky Mountain spotted fever
14. Cancer
15. Influenza and pneumonia
16. Clonorchiasis
17. Goiter
18. Milk
19. Housing

This division is in charge of an assistant surgeon general, and the general direction of all field investigations is from the Washington office, but in many studies headquarters are established in the field and the details of the work are directed from field headquarters. The Hygienic Laboratory is located at Washington. The laboratories of marine hospitals and quarantine stations are utilized for field investigations, but the Division of Scientific Research does not exercise any control over the routine work of these laboratories undertaken in connection with medical treatment.

This division also assists other divisions of the Service in the preparation of statistical material needed in connection with gen-

eral studies of the diseases of man. In this connection it operates a general statistical office which was established for the following purposes:

1. To furnish, in connection with many other lines of service activities, the technical advice required in planning their statistical work and in the analyses of the results.
2. To conduct certain statistical studies independently but closely coördinated with other field and epidemiological studies carried on by the Public Health Service.
3. To provide a central plant, with experienced personnel and necessary mechanical equipment, for the tabulation of material collected in previous studies and reports of disease prevalence.

Public Health Districts. In 1923 the Continental United States was divided into seven Public Health Districts and an experienced officer of the Public Health Service was placed in charge of each, with the object of bringing about closer coördination of the various activities of the service. The boundaries of the Interstate Sanitary Districts were changed at the same time to correspond to these districts. In January, 1925, a rearrangement of districts was effected, as follows:

Public Health District No. 1.... (District of the North Atlantic)	Comprising the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York and New Jersey. District Director, Assistant Surgeon General Rupert Blue.
Public Health District No. 2.... (District of the Middle Atlantic)	Comprising the States of Pennsylvania, Delaware, Maryland, District of Columbia, West Virginia, Virginia, North Carolina, South Carolina, Kentucky, and Tennessee. District Director, Surgeon B. S. Warren.
Public Health District No. 3.... (District of the Great Lakes and the Missouri)	Comprising the States of Ohio, Indiana, Illinois, Wisconsin, Michigan, Missouri, Iowa, Minnesota, North Dakota, South Dakota, Nebraska and Kansas. District Director, Senior Surgeon C. C. Pierce.

Public Health District No. 4. (District of the Gulf)	Comprising the States of Florida, Georgia, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas. District Director, Surgeon John McMullen.
Public Health District No. 5. (District of the South Pacific)	Comprising the States of California, Nevada, Utah, Arizona, New Mexico, and Colorado. District Director, Senior Surgeon J. C. Perry
Public Health District No. 6. (District of the North Pacific)	Comprising the States of Washington, Oregon, Idaho, Montana, and Wyoming. District Director, Senior Surgeon G. M. Magruder.

The duties assigned to the district directors are, in general, to:

1. Make inspections of service stations and activities.
2. Study and report upon standardization of methods and facilities, including personnel.
3. Coördinate service activities by means of conferences with service officers in the district.
4. Investigate and adjust controversies on instructions from the Surgeon General.
5. Service on boards convened by the Surgeon General.
6. Report on matters affecting service and public health policies.
7. Promote cordial relations with state and local sanitary authorities and other public health organizations.
8. Maintain an office which will serve as a general center for Public Health Service matters.
9. Carry out additional instructions issued from time to time by the bureau.

In the discharge of these functions it was made clear that the work of the directors was to be of an investigational character, and was not to include authority over the internal affairs of stations or disciplinary powers over their personnel, such matters to be taken up in reports to the bureau.

Personnel. While the President in time of war may utilize the Public Health Service in any manner that will promote the public interest,[97] and while during the war with Germany he made

[97] Act of July 1, 1902 (32 Stat. L., 712)

it a part of the military forces of the United States,[98] it is essentially a civil organization. Nevertheless, ever since the reorganization of the Marine Hospital Service in 1870 the commissioned medical personnel has been in uniform and has had an organization analogous to that of the Medical Corps of the Army and Navy. Provision is made for promotion in certain grades after a specific period of service, longevity pay, allowance for quarters, discipline through boards of investigation, and retirement. There is a definite distinction as to appointment and conditions of service between the commissioned medical personnel on the one hand and the scientific personnel, subordinates, and clerks on the other. The members of the commissioned medical corps are appointed by the President, by and with the advice and consent of the Senate, and their salary is fixed by law. The regulations affecting these officers differ materially from those affecting all other employees, who are appointed by the Secretary of the Treasury in accordance with Civil Service Regulations. They are subject to duty and changes of stations whenever required; all others are local appointments.

The regular commissioned personnel system is particularly interesting, as it provides for periodic promotion, longevity pay, the elimination of the unfit through examination, and retirement for disability or age. Periodic promotion and the elimination of the unfit are also provided for certain of the scientific personnel.[99]

Commissioned Personnel. The commissioned personnel consists of the regular commissioned officers and the commissioned officers of the reserve corps. The grades in the regular commissioned medical corps are fixed by statute as those of surgeon general, assistant surgeons general, senior surgeons, surgeons, passed assistant surgeons, and assistant surgeons (37 Stat. L., 309).

The act of January 4, 1889, requires original appointments in the Service to be made only to the lowest grade—that of assistant surgeon—and after the applicant has passed a satisfactory examination in medicine, surgery, and hygiene before a board of medical officers of the service (25 Stat. L., 639). The regulations require that the applicant must be between 23 and 32 years of age, a graduate of some reputable medical college, and have had one year's hospital experience or two years in professional practice.

[98] Executive Order of April 3, 1917.
[99] See page 165.

Acting assistant surgeons whose compensation is more than $300 and who have served five years continuously preceding the examination, and reserve officers who have had five years' service, may take the examination for assistant surgeon, provided they are less than 45 years old.[100] All applicants must be examined for physical defects.[101]

In order to train the newly appointed officers in the technique of the various branches of the service, they are detailed, when practicable, for the following service: Marine hospital, three months; quarantine station, four months; immigration station, five months; Hygienic Laboratory, six months. The number of assistant surgeons is not specifically fixed, being determined by the amount of money appropriated for the work of the service. On June 30, 1925, the number of assistant surgeons was twenty-three.

An assistant surgeon can be promoted to the rank of passed assistant surgeon only after four years' service. The regulations provide that not less than thirty days prior to the expiration of four years' service, an assistant surgeon shall be given a physical and professional examination for promotion to the grade of passed assistant surgeon. If he fails in the first examination for promotion, he is given a second examination after the expiration of one year. If he fails in the second examination, he is reported to the Secretary of the Treasury as not qualified for promotion and is requested by the Secretary to tender his resignation.[102] The number of passed assistant surgeons is determined automatically by the number of promotions from the grade of assistant surgeon. On June 30, 1925, the number of passed assistant surgeons, including three on waiting orders, was twenty.

The law specifies that a passed assistant surgeon shall not be promoted to the rank of surgeon without examination (25 Stat. L., 639). The regulations provide that after twelve years' service from the date of his original commission (or eight years after promotion from rank of assistant surgeon if he passed the first examination) a passed assistant surgeon shall be entitled to promotion to the grade of surgeon after passing the required written and physical examination. If he fails in the first examination, he

[100] Regulations 1920, Par. 25-27.
[101] *Ibid.*, Par. 65.
[102] *Ibid.*, Par. 65.

is given a second one at the expiration of a year; if he fails in the second examination he is reported to the Secretary of the Treasury as not qualified for promotion, and is requested by the Secretary to tender his resignation.[103] The number of surgeons is not limited by law, but is determined by the promotion from the next lower grade. On June 30, 1925, the number of surgeons, including four on waiting orders was 132.

The law does not specify how promotions shall be made to the grades above that of surgeon, but the regulations provide that a vacancy in the grade of senior surgeon shall be filled on the recommendation of a board of regular commissioned medical officers by promotion of an officer of the regular commissioned medical corps according to seniority, subject to a physical examination and a review by the board of the officer's record as to fitness. The regulations specify that no officer over 64 years old shall be promoted to the grade of senior surgeon.[104] If a surgeon is not recommended for promotion, he is reported to the Secretary of the Treasury as not qualified for promotion, and is "placed in the official register of the service as 'not in line for promotion.'"[105] The act of August 14, 1912 (37 Stat. L., 39), limits the number of senior surgeons on active duty to ten. On June 30, 1925, the number of senior surgeons was twenty-one, there being eleven on active duty, nine on waiting orders, and one on leave.

Regular commissioned officers may be temporarily promoted during an emergency when ordered to assume charge of important work by transferring them to the reserve corps at a higher grade. While doing such work they are given such rank in the reserve as in the direction of the Secretary of the Treasury the importance of the work may require. Unless sooner terminated by direction of the President, the commission in the reserve terminates when the emergency ceases. The temporary transfer of officers from the regular corps to the reserve does not create a vacancy in the grade from which the officer is transferred. At the termination of a temporary commission in the reserve the officer returns to the grade and number he would have occupied if not transferred.[106]

[103] *Ibid.*, Par. 68-69.
[104] *Ibid.*, Par. 70.
[105] *Ibid.*, Par. 73.
[106] *Ibid.*, Par. 77-78.

The act of July 1, 1902 (32 Stat. L., 712), provides that commissioned medical officers detailed by the surgeon general for duty in charge of the administrative divisions shall be assistant surgeons general. By this act no officer below the rank of passed assistant surgeon may be detailed for this duty. The regulations provide that after the expiration of the detail, an assistant surgeon general may be reassigned for an additional period of four years, but after the expiration of the second detail, he is not eligible for a third detail unless he shall have served at least four years at some other duty. The regulations are silent regarding the length of the first detail, but in practice the period has been four years. The temporary assignment for duty as assistant surgeon general does not create a vacancy in the grade occupied by the officer; at the end of the detail he returns to the grade and number he would have held if he had not been assigned as chief of division.[107]

Assistant surgeons general at large were first provided for by the sundry civil appropriation act for the fiscal year of 1920 (41 Stat. L., 174), which did not specify their qualifications or methods of selection, but simply made money available for pay, allowance, and commutation of quarters of "assistant surgeons general at large not exceeding three in number." This authority has been carried in similar form in subsequent appropriation acts. The regulations provide that a vacancy in the grade of assistant surgeon general at large shall be filled on the recommendation of a board of regular commissioned officers by the promotion of an officer who has served as surgeon general or of an officer of the regular corps according to seniority. The officer promoted is examined physically and his record is reviewed by the board. No officer over 64 years of age is eligible for promotion to such a vacancy.[108] On June 30, 1924, there were four such officers, two of whom were on waiting orders.

The Surgeon General is appointed by the President, by and with the advice and consent of the Senate (Act of March 3, 1875; 18 Stat. L., 377). The regulations of 1889, 1897, 1902, 1913, and 1920 provided that the Surgeon General should be selected from the medical officers of the service above the grade of passed assistant surgeon. In 1911, however, the Acting Attorney General gave an

[107] *Ibid.*, Par, 16-17.
[108] *Ibid.*, Par. 71.

opinion that the "law does not restrict the President in selecting a surgeon general of the Public Health and Marine Hospital Service to the list of commissioned officers in the medical corps of the service."[109] The act of August 14, 1912 (37 Stat. L., 309), did not make any change in the methods of appointment, merely stating that "all laws pertaining to the Public Health and Marine Hospital Service of the United States shall hereafter apply to the Public Health Service, and all regulations now in force, made in accordance with law for the Public Health and Marine Hospital Service, shall apply to and remain in force as regulations of and for the Public Health Service until changed or rescinded." Notwithstanding the opinion of the Acting Attorney General, the regulations of 1913 and 1920 require the Surgeon General to be selected from the commissioned medical personnel. This provision, however, evidently does not bind the President in his selection. The President prescribes the regulations of the Service (32 Stat. L., 712, sec. 9), and he can amend this regulation or ignore it at any time he desires to do so.

As a matter of fact, all surgeons general except the first one have been appointed from the officers of the Service. The first Surgeon General, Dr. J. B. Woodworth, served eight years, from 1871 to 1879, and died in office. His successor, Dr. J. B. Hamilton, served twelve years, from 1879 to 1891, and was relieved at his own request and commissioned as a surgeon in the Service. The third officer to hold this position, Dr. Walter Wyman, served twenty years from 1891 to 1911 and died in office. After the death of Dr. Wyman, President Taft appointed the new Surgeon General for a term of four years. Dr. Rupert Blue was appointed in 1912 and was reappointed in 1916, being succeeded in 1920, on the expiration of his second term, by Dr. Hugh S. Cumming, who was reappointed for another four years in 1923.

The present regulations fix the term of office of the Surgeon General at four years; they provide also that the Surgeon General shall be selected from the commissioned medical officers of the regular corps above the grade of passed assistant surgeon.[110] As the President has fixed the term of office at four years, there is

[109] 29 Op. Att. Gen. 287.
[110] Regulations 1920, Par. 10-11.

nothing to prevent him from changing the length of the term or making it indefinite.

The regulations provide that upon the expiration of his term the Surgeon General shall return to the grade and number he would have occupied if he had not been appointed Surgeon General. He may be appointed assistant surgeon general at large on the recommendation of a board of regular commissioned medical officers.[111] At the expiration of his term he may also be appointed an assistant surgeon general in the reserve for duty in an advisory capacity in the direction of training schools and stations, with pay and allowances of an assistant surgeon general on active duty. This appointment does not create a vacancy in the grade from which he was appointed surgeon general, and at any time on his own request he may be transferred back to the grade and number which he would have occupied in the regular corps if he had not been appointed Surgeon General and commissioned in the reserve.[112]

Commissioned officers and pharmacists are not permanently assigned to any particular hospital or station, but are appointed to the Service at large and are moved from station to station. The tour of duty is ordinarily four years, except at quarantine stations where it is three years. The regulations provide that service outside the geographical limits of the United States shall not exceed three years unless the officer makes application for an extension of such service.[113]

The annual salaries of regular commissioned officers are now fixed by the act of June 10, 1922,[114] prescribing the pay and allowances of the commissioned personnel of the Public Health Service, Army, Navy, Marine Corps, Coast Guard, and Coast and Geodetic Survey. This act fixes the base pay according to rank and period of service and in addition provides longevity pay, allowance for quarters when these are not furnished, and allowance for subsistence. The base pay and the number of allowances are given on page 170.

The longevity pay is 5 per cent of the base salary for each three years service up to thirty years, but it is provided that the base pay plus longevity for officers below the grade of assistant surgeon

[111] *Ibid.*, Par. 71.
[112] *Ibid.*, Par. 11-12.
[113] *Ibid.*, Par. 193.
[114] 42 Stat. L., 625.

general shall not exceed $5750. It is also provided that the total of the base pay, longevity pay, and allowances for subsistence and quarters shall not exceed $7200.

Each subsistence allowance is fixed at sixty cents a day for the fiscal year 1923, and it is provided that the value for subsequent years shall be fixed by the President in accordance with a certifi-

BASE PAY AND ALLOWANCES OF COMMISSIONED OFFICERS

Period	Officers receiving base rate at each period	Base rate of pay	Subsistence allowances for officers with dependents [a]	Allowance when quarters are not furnished	
				Officers with dependents	Officers without dependents
			Units	*Rooms*	*Rooms*
Sixth	Assistant surgeons general with 26 years service. Senior surgeons with 30 years service.	$4,000	2	6	4
Fifth	Assistant surgeons general not entitled to pay of sixth period. Senior surgeons with 20 years service. Surgeons with 23 years service.	3,500	3	6	4
Fourth	Senior surgeons not entitled to pay of fifth or sixth periods. Surgeons with 14 years service. Passed assistant surgeons with 17 years service.	3,000	3	5	3
Third	Surgeons not entitled to pay of fourth or fifth periods. Passed assistant surgeons with 7 years service. Assistant surgeons with 10 years service.	2,400	2	4	3
Second	Passed assistant surgeons not entitled to pay of third or fourth periods. Assistant surgeons not entitled to pay of the third period.	2,000	2	3	2
First	None in Public Health Service.	1,500	..	..	..

[a] An officer without dependents receives only one subsistence allowance regardless of period of service.

cate furnished by the Secretary of Labor showing the comparative retail cost of food as compared with the calendar year 1922.

The value of the allowance for one room is fixed at twenty dollars a month for the fiscal year 1923, and its value for future years is to be determined by the President in the same manner as the allowance for subsistence.

It will be noted that the allowances for subsistence and quarters are higher for officers with dependents, which includes the wife, unmarried children under 21 years of age, and the mother of the officer if she is in fact dependent on him for support. The subsistence allowances for the highest grade is smaller than for the two next lower, as it is presumed that by the time an officer reaches this rank his children will have been educated and will be self supporting.

It will be of interest to apply these principles to a surgeon of sixteen years service to whom quarters are not furnished. As his service has been more than fourteen and less than twenty-three years, he draws the pay and allowances of the fourth period which are as follows:

	With dependents	Without dependents
Base pay	$3,000	$3,000
Longevity, 5% for each of five 3-year periods	750	750
Subsistence allowance (three at 60 cents a day for officers with dependents; one at 60 cents a day for officers without dependents)	657	219
Allowance for quarters (5 rooms at $20 a month for officers with dependents, 3 rooms at same rate for officers without dependents)	1,200	720
	$5,607	$4,689

The base pay of the Surgeon General is fixed at $6000. He does not receive longevity pay, but he is entitled to two subsistence allowances if he has dependents and one such allowance if he has no dependents; if quarters are not furnished, he receives an allowance of six rooms if he has dependents and of four rooms if he has no dependents. The maximum of base pay plus allowances for subsistence and quarters is fixed at $7500. The act of June 10, 1922, does not change the method of promotion in rank.

The salaries of all commissioned medical officers are paid from lump sum appropriation for salaries or for specific lines of work.

Officers of the Public Health Service are permitted to purchase quartermaster supplies from the Army, Navy, and Marine Corps at the price charged officers of those services.[115]

Officers detailed for duty at leprosaria receive in addition to the pay and allowances of the grade, one-half the pay of the grade and such allowances as may be provided by the Surgeon General, with the approval of the Secretary of the Treasury.[116]

The retirement of regular commissioned officers who are unfit to perform duties by reason of disease or injury or who have reached the age of 64 years is accomplished by placing them on waiting orders.[117] Officers on waiting orders for a period longer than two months receive 75 per cent of the pay of their rank. There has been no specific legislation governing the retirement of officers or authorizing that they be placed permanently under waiting orders, but the regulations effecting this have been given the force of law by the act of July 1, 1902 (32 Stat. L., 712). Waiting orders are referred to in the regulations of the Service for the first time in 1889.[119] These regulations provided that officers placed on "Waiting orders" for more than two months should receive 75 per cent of the pay of their grade, but prescribed no method by which officers were to be placed in this status. The regulations of 1897 provided definite procedure for placing under waiting orders officers unfit to perform their duties by reason of disease, injury, or age. The compensation under waiting orders was fixed as before at 75 per cent of the salary of the grade.[120] These regulations were evidently based on the act of June 29, 1870 (16 Stat. L., 169), which provided that the duty of the supervising surgeon should be, "under the direction of the Secretary [of the Treasury], to supervise all matters connected with the Marine Hospital Service, and with the disbursement of the fund provided by this act." The act of July 1, 1902 (32 Stat. L., 712), provided that "the salaries and allowances of the commissioned medical officers of said ser-

[115] Act of March 6, 1920 (41 Stat. L., 507).

[116] Act of March 3, 1905 (33 Stat. L., 1010); act of March 4, 1911 (36 Stat. L., 1394); act of February 3, 1917 (39 Stat. L., 873).

[117] Regulations 1920, Par. 74.

[118] *Ibid.*, Par. 113.

[119] Regulations 1889, Par. 24.

[120] Regulations 1897, Par. 195-96.

vice shall be the same as now provided by regulations of the Marine Hospital Service." This regulation therefore "legalized the regulation of 1897 providing pay under waiting orders and made it law." [121]

No method is provided by law for placing officers under "waiting orders," but Section 9 of the act of July 1, 1902, states that "the President shall from time to time prescribe rules for the conduct of the Public Health and Marine Hospital Service. He shall also prescribe regulations respecting its internal administration and discipline and the uniforms of its officers and employees."

The existing regulations of the service provide that when any commissioned medical officer reports himself or is reported unfit to perform his official duties by reason of disease or injury, or when he has reached the age of 64 years, he shall be ordered by the Secretary of the Treasury to appear before a board of commissioned officers, who shall recommend the officer for "waiting orders" if the disability was received in line of duty. If the Secretary of the Treasury approves the finding of the board, the officer is placed on waiting orders by direction of the President.[122] At the end of the fiscal year 1925, nineteen officers were under "waiting orders." [123]

Leave of absence to commissioned medical officers is governed by the act of February 19, 1897 (29 Stat. L., 554), which provides that leaves of absence without deduction of pay is authorized, in the discretion of the Secretary of the Treasury "for the same periods of time and in the same manner as is now authorized to be granted to officers of the Army by the Secretary of War." Leaves of absence in the Army are governed by Section 1265 of the Revised Statutes and the act of July 29, 1876 (19 Stat. L., 102), which provide that officers absent on account of sickness shall receive full pay, no time limit being specified. Officers absent on leave for other causes shall receive full pay for not exceeding thirty days in any one year and half pay for absence exceeding thirty days. However, the leave may be extended to sixty days if taken only once in two years, to three months if taken only once in three years, and to four months if taken only once in four

[121] 19 Comp. Dec. 512.
[122] Regulations 1920, Par. 74.
[123] Surg. Gen., Annual Report, 1921, p. 347.

years. The regulations of the Service further provide that "an officer who has four months' leave credits may get five months on full pay by going between February and May 20."[124]

Serious infractions of discipline and charges against commissioned officers are tried before boards of investigation, composed of not less than three commissioned medical officers of the Service. Boards of investigation are ordered only by the President or the Secretary of the Treasury, and make, in addition to a report of its findings, recommendations as to punishment if the accused officer is found guilty.[125] In organization and procedure these boards are analogous to courts martial in the Army and Navy. The Surgeon General may detail an officer to act as prosecutor, and the accused may be represented by council. All proceedings are under oath. The punishments that may be recommended by a board are summary dismissal from the service, or one or more of the following: suspension from duty without pay; suspension from duty on half pay, reduction of rank in his own grade, retention of his present number on register for a specified time or until a specified number of officers shall have been promoted over him, or official reprimand by letter.[126] The board transmits its report to the Surgeon General, who reviews the proceedings and findings and forwards them to the Secretary of the Treasury with his recommendations.

A commissioned officer can not be dismissed from the Service without a hearing before a board of investigation, and no finding of such a board recommending the dismissal of a commissioned officer can be carried into execution until it has been approved by the President.[127]

A reserve corps in the Public Health Service similar to the reserve corps in the Army and Navy was authorized by the joint resolution of October 27, 1918 (40 Stat. L., 1017). The President is authorized to appoint and commission in the reserve persons who, after examination prescribed by the President, are found physically, mentally, and morally qualified. Commissions are issued for a period of five years unless sooner terminated in the

[124] Regulations 1920, Par. 224.
[125] *Ibid.*, Par. 294-95.
[126] *Ibid.*, Par. 345.
[127] *Ibid.*, Par. 347-48.

discretion of the President. The officers commissioned are to be distributed in the several grades in the same proportion as the regular commissioned officers. The reserve officers are subject to call to active duty at all times, and when on duty receive the same pay and allowances as the commissioned officers in the regular corps.

Applicants for appointment as reserve officers are examined by a board of commissioned officers, which makes recommendations for appointment.[128] A board of three or more commissioned officers is convened from time to time for the purpose of recommending reserve officers for promotion. Vacancies in the higher grades are ordinarily filled by promotion from the lower grades, but they may be filled by original appointment.[129]

Non-Commissioned Personnel. All non-commissioned employees are appointed by the Secretary of the Treasury or under authority granted by him, and in most cases certification by the Civil Service Commission is necessary. Internes are appointed after an examination by a board of officers of the Service. The positions that are not subject to examination are the minor places that are generally excepted from the classified civil service and places which require only temporary appointments. The salaries of the scientific personnel, pharmacists, administrative assistants, nurses, dietitians, and reconstruction aides are fixed by the regulations. As the regulations are promulgated by the President the salaries fixed by regulations may be changed at any time. In a matter of this kind the President is generally guided by the recommendations of the chief of the bureau and department concerned. The salaries of other employees are fixed by the Secretary of the Treasury.

Non-commissioned employees are granted the same leave of absence as employees in other branches of the Federal service, namely, thirty days annual leave and a maximum of thirty days sick leave. Neither sick nor annual leave is cumulative. Non-commissioned employees receive allowances only as specifically indicated below.

[128] *Ibid.*, Par. 46-56.
[129] *Ibid.*, Par. 76.

The scientific personnel, in the technical sense used here and in the regulations of the Service, includes all persons engaged in scientific work, with the exception of commissioned officers and the personnel of the Hygienic Laboratory. Both of these excepted classes are engaged in scientific work, but methods of appointment and promotion are provided for separately in the regulations and are discussed elsewhere.[130]

Employees engaged in scientific investigation are designated according to the character of the work for which they are qualified, such as sanitary engineers, chemists, bacteriologists, zoologists, etc. Each main designation is divided into six coördinate classes, with appropriate prefixes to designate the class. The classes for sanitary engineers are given below, the chemists, zoologists, etc., being similarly graded:

I. Directing sanitary engineer.
II. Senior sanitary engineer.
III. Sanitary engineer.
IV. Associate sanitary engineer.
V. Assistant sanitary engineer.
VI. Junior assistant sanitary engineer.

Original appointments are ordinarily made to the lowest grade, but if an applicant has special qualifications and has had previous experience adapting him to the work, he may be appointed to any class below Class I. After two years' service in Class VI and three years' service in Class V, a member of the scientific personnel is entitled to promotion to the next highest grade, provided he passes a satisfactory technical and physical examination and has had a good record for efficiency, honesty, and sobriety. If he fails in his first examination, he may be given a second one at the expiration of a year, but if he fails the second time he is separated from the service, the report of the board of examiners being used as the basis for charges.

An appointee of Class IV is entitled to promotion to Class III in order of seniority after twelve years' service from date of original appointment. Those who had honorable service in the Public Health Service at any time between April 6, 1917, and November 11, 1918, are entitled to promotion at the expiration of

[130] See pages 164, 177.

eight years from date of their original appointment; however, they must pass a satisfactory physical and technical examination. As in the case of Classes VI and V, an appointee is separated if he fails to pass the second examination after the expiration of one year. The number in Class II is limited to five, and vacancies are filled on the recommendation of a board of regular commissioned medical officers by promotion to an appointee of Class III according to seniority, subject to a physical examination and a review of his fitness. No appointee who is over 64 years of age or who is not physically fit or whose record does not show meritorious service may be promoted to this grade. In exceptional cases original appointments may be made to this grade.

The number in Class I is limited to four, and vacancies are filled on the recommendation of a board of regular commissioned medical officers by the promotion of an appointee from Classes II and III according to seniority, subject to a physical examination and a review of his fitness. No one over 64 years of age, or who is not physically fit and whose record does not show meritorious service, may be promoted to this grade.

Scientific personnel on permanent change of station are entitled to ship not exceeding 7200 pounds of baggage at government expense. They are also reimbursed for packing and drayage at a rate not exceeding two dollars per hundred pounds of freight.[131]

The director, assistant director, and the Chief of the Division of Pathology and Bacteriology of the Hygienic Laboratory are commissioned medical officers of the Service detailed by the Surgeon General. The act of July 1, 1902 (32 Stat. L., 712), provides that the director must be a commissioned medical officer, but the detail of officers to the positions of assistant director and Chief of the Division of Pathology and Bacteriology is provided for by the regulations of the Service.[132] The act of July 1, 1902, also provides that the chiefs of the Divisions of Chemistry, Zoology, and Pharmacology shall be appointed by the Secretary of the Treasury when commissioned medical officers are not available. Commissioned medical officers in the Service above the rank of assistant surgeon are eligible for detail for duty in charge of these divisions.

[131] Regulations 1920, Par. 79-86.
[132] *Ibid.*, Par. 520, 522.

The pay of the Director of the Laboratory is fixed by the act of March 4, 1913 (37 Stat. L., 915), as that of a senior surgeon. The pay of the Assistant Director and the Chief of the Division of Pathology and Bacteriology is that of their rank. The regulations of 1920, as amended, provide that thereafter the chiefs of the Divisions of Chemistry, Pharmacology, and Zoology, shall be known as professors of chemistry, pharmacology, and zoology.

If commissioned medical officers are detailed as chiefs of division, they receive the pay and emoluments of their rank.[133]

The regulations approved August 29, 1920, as amended March 31, 1922, provide that pharmacists in the Service shall be divided into three classes, but that no further appointments shall be made to this class of employees. After three years' service, pharmacists of the third class are promoted to the grade of pharmacist of the second class after passing a physical and professional examination. If they fail to pass the examination, they are allowed a second one at the expiration of one year, and if they fail the second time they are separated from the service.

After ten years' service from the time of their original appointment, pharmacists of the second class are examined for promotion to the grade of pharmacists of the first class. If they fail they are allowed a second examination at the end of a year, but if they again fail they are separated from the Service.

The regulations approved August 29, 1920, as amended March 31, 1922, provide that administrative assistants shall be divided into four classes. Administrative assistants of Class 1 are employed only in hospitals with a capacity of more than two hundred beds, or at a field station where the duties are of equal importance to those at a hospital of similar size. Administrative assistants are placed in Classes 2, 3, and 4 in accordance with the responsibility and difficulty of the work, and the efficiency of the individual.

Nurses, dietitians, reconstruction aides, internes, and attendants are entitled to quarters, heat and light, subsistence, and laundry, but when these cannot be supplied by the Service, these employees may be reimbursed in a sum not exceeding $25 a month for quarters, heat and light, $5 for laundry, and $35 for subsistence.

Acting assistant surgeons are appointed for temporary work, for work requiring only part time, or for general or hospital duty

[133] Act of July 1, 1902 (32 Stat. L., 728).

when the personnel of the Service is not sufficient. Officers of this class receiving more than $480 a year are appointed after certification by the Civil Service Commission; those receiving less than $480 a year are appointed by the Secretary of the Treasury on the recommendation of the Surgeon General. Their salary is fixed by the Secretary of the Treasury, and as they are not commissioned officers they are not entitled to quarters or to allowances if quarters are not furnished.

Acting assistant dental surgeons are appointed in the same manner and have the same status as acting assistant surgeons.

Prior to 1923, salaries of the scientific personnel and of all other employees in Washington were determined by the regulations of the Service. On March 4, 1923, however, there was passed the Classification Act (42 Stat. L., 1448), which governs all positions in the departments and establishments in Washington, with the exception of the commissioned corps and certain other positions. It was designed to classify positions and fix their compensation on the basis of the duties and responsibilities of those positions. A number of grades are established, such as the professional and scientific service; the subprofessional; the clerical, administrative, and fiscal service; the custodial; and the clerical-mechanical. Standard rates of compensation are to be paid in each grade, the personnel being allocated in the various grades by heads of departments in a manner prescribed by the Personnel Classification Board, which reviews and revises the allocations. Advancement from rate to rate within a grade is dependent on efficiency and is controlled through an efficiency rating system and the provisions of the appropriation acts.

The grades and ranges of annual salaries are as follows:

PROFESSIONAL AND SCIENTIFIC

1. Junior professional, from $1860 to $2400
2. Assistant professional, from $2400 to $3000
3. Associate professional, from $3000 to $3600
4. Full professional, from $3800 to $5000
5. Senior professional, from $5200 to $6000
6. Chief professional, from $6000 to $7000
7. Special professional, $7500

In these grades come all the scientific workers of the Service who are not part of the medical corps.

SUBPROFESSIONAL

1. Minor subprofessional, from $900 to $1260
2. Under subprofessional, from $1140 to $1500
3. Junior subprofessional, from $1320 to $1680
4. Assistant subprofessional, from $1500 to $1860
5. Main subprofessional, from $1680 to $2040
6. Senior subprofessional, from $1860 to $2400
7. Principal subprofessional, from $2100 to $2700
8. Chief subprofessional, from $2400 to $3000

The nurses of the service have been placed by the Personnel Classification Board in this subprofessional group, though against the protest of the Surgeon General and contrary to the desires of the nursing organizations of the country. The Army and Navy have nurse corps with commissioned rank for the members.

The salaries of the other groups need not be given in detail. There are fourteen grades in the clerical, administrative, and fiscal service, with salaries ranging from $1140 to $7500 per annum. The number in the various groups are given in detail in the Budget for the fiscal year 1927, including field workers, who have also been classified.

Appropriations. The following is a statement of appropriations for the Public Health Service for the fiscal year 1925, as given in the 1925 report of the Surgeon General:

Appropriation	Amount
Salaries, office of Surgeon General	$ 104,405.00
Books	500.00
Freight, transportation, etc.	30,000.00
Maintenance, Hygienic Laboratory	44,600.00
Pay, etc., commissioned officers and pharmacists	1,135.000.00
Pay of acting assistant surgeons	322,228.00
Pay of other employees	1,027,827.00
Preparation and transportation of remains of officers	3,000.00
Pay of personnel and maintenance of hospitals	[a] 5,748,884.46
Medical and hospital services, Veterans' Bureau (transfer to Public Health Service, act June 7, 1924)	384,960.00
Salaries and expenses, Veterans' Bureau (transfer to Public Health Service, act June 7, 1924)	18,580.00
Quarantine Service	479,000.00
Preventing the spread of epidemic diseases	363,482.00
Preventing the spread of epidemic diseases, 1925 and 1926	275,000.00
Field investigations of public health	299,356.00
Interstate quarantine service	22,530.00

[a] Includes $330,135.46 reimbursements for care and treatment of Veterans' Bureau patients.

Appropriation	Amount
Interstate quarantine service, 1925 and 1926	$ 57,600.00
Studies of rural sanitation	75,760.00
Control of biologic products	45,020.00
Expenses, Division of Venereal Diseases	149,040.00
Marine hospitals:	
Baltimore, Md.	[b] 387.12
Savannah, Ga.	[b] 10,128.07
Boston, Mass.	[b] 16,462.26
Cleveland, Ohio	[b] 474.95
New Orleans, La.	[b] 887.67
San Francisco, Calif.	[b] 880.02
Quarantine stations:	
Boca Grande, Fla.	[b] 500.00
Boston, Mass.	[b] 3,835.72
Brunswick, Ga.	[b] 4,279.37
Cape Charles, Va.	[b] 1,358.05
Charleston, S. C.	[b] 634.46
Chesapeake Bay (site)	[b] 6,935.00
Columbia River	[b] 4,146.66
Columbia River (boarding vessel)	[b] 5,750.90
Delaware Breakwater	[b] 857.00
Gulf	[b] 868.39
Honolulu, T. H.	[b] 390.52
Key West and Mullet Key, Fla.	[b] 19,996.83
Mobile, Ala.	[b] 10,000.00
New Orleans, La.	[b] 5,750.90
Pensacola, Fla.	[b] 919.52
Port Townsend, Wash.	[b] 20,806.53
San Diego, Calif.	[b] 760.37
San Francisco, Calif.	[b] 6,393.70
San Juan and Ponce, P. R.	[b] 3,414.42
Savannah, Ga.	[b] 12,063.65
South Atlantic	[b] 2,729.90
Leprosy Hospital, Honolulu, Hawaii	[b] 16,969.43
	$10,745,353.87

[b] Balance available as of June 30, 1924.

The Bureau of Internal Revenue.[134] The Bureau of Internal Revenue, the most important fiscal agency of the government, was established in the Treasury Department in 1862 (12 Stat. L., 432), though collectors of internal revenue had been authorized in 1798 (1 Stat. L., 599). The duties of this service are to collect all Federal taxes other than those levied on imports, and to enforce

[134] See Schmeckebier and Eble, The Bureau of Internal Revenue. Institute for Government Research, Service Monograph No. 25.

certain regulatory laws, such as those pertaining to the sale of alcoholic liquors, narcotic drugs, and white phosphorus matches. Many of these have a direct bearing on the public health.

Taxation and Public Health. The first important piece of internal revenue legislation relating to the public health was the tax on oleomargarine, imposed by the act of August 2, 1886 (24 Stat. L., 209). Congress quite frankly passed this law as a regulatory, as well as revenue raising measure, and it was designed primarily to assist the dairy interests.[135] The act has been upheld by the courts.[136]

In order to conduct the necessary analytical work entailed by this law, an Analytical and Chemical Division was set up in the Bureau in 1886. An act of 1888 (25 Stat. L., 549), to prevent the manufacture and sale of adulterated foods in the District of Columbia, increased the activities of this Division, as the health authorities were authorized to submit samples to the Bureau of Internal Revenue for analysis.[137] With the passage of the Pure Food and Drug Act of 1906 (34 Stat. L., 768), the analytical activities of the Division of Chemistry, as it was then called, were transferred to the Bureau of Chemistry of the Department of Agriculture.

Duties in connection with the Prohibition and Narcotic Acts have, however, developed the present Industrial Alcohol and Chemical Division of the Bureau into an important service. Branch laboratories are operated in New York, Columbus, Chicago, Little Rock, and San Francisco, and a coöperative arrangement has been effected with the Department of Agriculture whereby internal revenue chemists are stationed in certain food and drug laboratories, where it is not advisable for economic reasons to maintain separate establishments. Under this arrangement the chemists work in the food laboratories at Buffalo, Minneapolis, and Denver.

Several other tax laws which are regulatory or prohibitory have been passed by Congress, and their collection and enforcement entrusted to the Bureau of Internal Revenue. These include a tax on

[135] The report of the House Committee on Agriculture said, "That there are from four to five million American citizens engaged in the dairy business and that they must all abandon it and be driven into some other already overworked branch of industry unless they can be relieved from the present ruinous competition with cheap imitations of butter and cheese."

[136] See page 56.

[137] This law of 1888 was practically repealed by a later act, that of February 17, 1918 (30 Stat. L., 246).

"filled cheese" (Act of June 26, 1896; 29 Stat. L., 253), a tax on mixed flour (Act of June 13, 1898; 30 Stat. L., 448), and a tax on white phosphorus matches (Act of April 9, 1912; 37 Stat. L., 81). None of these have been productive of much revenue, but have been successful as prohibitory measures, as manufacturers have found it expedient to discontinue making those articles. Child labor products were taxed by the act of February 24, 1919 (40 Stat. L., 1138), but this law was declared unconstitutional on May 15, 1922. While in operation it was enforced by the Child Labor Tax Division of the Bureau.

Narcotic Law Enforcement. The so-called Harrison Anti-narcotic Act went into effect on December 17, 1914 (38 Stat. L., 785), and was amended on February 24, 1919. Previous legislation concerning opium had been passed as early as October 1, 1890 (26 Stat. L., 620), imposing a tax of ten dollars a pound on all opium manufactured in the United States for smoking purposes. This sum was increased to $300 per pound by the act of January 17, 1914 (38 Stat. L., 277). An act of February 9, 1909 (35 Stat. L., 614), had prohibited the importation of opium except for medicinal use, while provisions of another act of January 17, 1914 (38 Stat. L., 275), regulated importation still further, absolutely prohibited exportation of smoking opium and allowed exportation of opium and cocaine and their derivatives only to countries regulating their entry, in accordance with the regulations of the several countries. The act of February 9, 1909, was amended again by the act of May 26, 1922 (42 Stat. L., 596). A Federal Narcotics Control Board, consisting of the Secretary of State, the Secretary of the Treasury, and the Secretary of Commerce, was created and empowered to make regulations for the importation of narcotics for medicinal uses only, all other importations being illegal, by the terms of the act. The administration of this last named law is given over to the Secretary of the Treasury, and is actually carried out by the Customs Service, the law clerk of which acts as secretary for the board.

Domestic control of narcotics under the Harrison Act which was reënacted in 1924 (43 Stat. L., 328) requires the registration of all persons, such as physicians, who dispense or deal with drugs, and the control of certain of their activities. The law is not only a source of revenue, amounting to over a million dollars annually,

but is also regulatory and has been so recognized by the United States Supreme Court.[138] There is, of course, much illicit traffic in drugs.

Organization. The organization in charge of enforcement of the narcotic laws comprises a Narcotic Division in the Prohibition Unit. This Division is composed of the Office of the Head of the Division and has three sections: Field, Legal, and Returns. The Field Section is in charge of the work of the field divisions, of which there are thirteen, each under a narcotic agent, the total force on this work in 1925 numbering 164 persons in the field. These field divisions endeavor to apprehend and prosecute violators of the law, whether registered parties, or illicit peddlers, and they also check up records and returns.

The work of the Legal Section consists of handling the officers' reports of law violations, the verification of taxes for assessment, consideration of claims for abatement or refund of taxes erroneously assessed or paid, consideration of offers in compromise covering violations, and miscellaneous matters concerning prescribing and dispensing of narcotic drugs and drug addiction.

The Returns Section audits the returns of importers, manufacturers and wholesale dealers, compiles statistical matter concerning operations in narcotics by registered persons, maintains a central index of such registered persons in this country and conducts miscellaneous correspondence along these lines.

The enforcement of the Prohibition Act has some bearing on public health and is, of course, now one of the major activities of the Internal Revenue office. Of a total appropriation of approximately $45,000,000 to the Bureau in 1925, somewhat over $10,000,000 was for the enforcement of the prohibition and narcotics acts.

The Customs Service.[139] The Customs Service was created in July, 1789, and in the following September placed in the newly organized Treasury Department, where it has been ever since. This Service collects duties on imports, enforces laws restricting imports and exports, collects taxes and enforces certain laws relating to vessels and navigation, and enforces other laws governing the

[138] United States *vs.* Jin Fuey Moy, 241 U. S. 394.

[139] See Schmeckebier, The Customs Service. Institute for Government Research, Service Monograph No. 33.

departure of persons. While its major activity is not in the field of public health, some of its duties have a bearing on that subject and in the past it has conducted certain definite health work.

In 1798 an act, that of July 16 (1 Stat. L., 605), directed collectors of customs to collect dues of twenty cents per seaman from the masters of merchant vessels, in order that medical and hospital relief might be furnished to members of the crews needing aid. While this law was the foundation for the development of the Marine Hospital Service,[140] the collectors of customs acted in the early days as ex-officio directors of the hospitals and, in fact, were authorized by Secretary Gallatin in 1809 to make all rules for government hospitals. The collectors remained in charge of the hospitals until 1870, when the Marine Hospital Service was definitely organized to take them over, and they continued to collect the tax until 1884, when it was abolished. To-day they collect the quarantine charges on vessels and the charges on foreign seamen treated in marine hospitals. These charges are determined by the Public Health Service.

In affording medical relief to American seamen at certain ports customs officers also act as agents of the Public Health Service. In 1924 there were fourteen such ports, the number having gradually decreased, through the appointment of acting assistant surgeons by the Public Health Service. The customs officers' duties in this connection consist merely in having a physician make the necessary examination.

The passenger act of August 2, 1882 (22 Stat. L., 186), as amended on December 19, 1908 (35 Stat. L., 583), contains a number of provisions to safeguard health, which the customs officers must enforce. These relate to size of quarters, ventilation, sanitary facilities, hospital facilities, and kind and quality of food. Collectors must ascertain the number of deaths, prevalence of unusual sickness or mortality, and its cause. Reports along these lines are sent to the Secretary of Commerce, as the Steamboat Inspection Service, under his jurisdiction, is also interested in such matters and charged with enforcing provisions for safety and welfare of passengers and crews.

[140] See page 76.

The importation of certain articles is forbidden unless they are of a definite standard of purity, and here again customs officers are charged with investigatory powers. Tea standards were set up in 1897 (29 Stat. L., 604), for instance, though now the detailed analytical work in this connection is entrusted to the Bureau of Chemistry in the Department of Agriculture, but the Customs Service is responsible until the tea is passed by the examiners of the Department of Agriculture. So, too, viruses, serums, and other biological products can be denied entry by customs officers, unless manufactured in accordance with regulations of the Public Health Service. The importation of narcotic drugs is permitted for medicinal purposes only. Meat products can be imported or exported only if passed by inspectors of the Bureau of Animal Industry of the Department of Agriculture. In a few places the customs officer acts as immigration inspector on behalf of the Bureau of Immigration of the Labor Department.

CHAPTER VIII

THE DEPARTMENT OF AGRICULTURE

In the Department of Agriculture there are eleven bureaus which are sufficiently concerned with public health to merit a description here of their functions and activities. The major duties of two of these agencies, the Bureau of Chemistry and the Bureau of Animal Industry, are in the field of public health. With two others, the health work is important, though only part of the general scope of the bureau. These are the Bureaus of Home Economics and of Dairying, both of which were elevated to the status of bureaus only within very recent years. The Extension Service also conducts important health activities. The other bureaus have only a more or less incidental interest in the subject. The Department of Agriculture has in all sixteen bureaus or offices and a number of boards under its jurisdiction.

The Bureau of Chemistry. The Bureau of Chemistry promotes agriculture and the industries that make use of agricultural products by chemical research and by the application of the results of such research to the solution of problems involved in the production, the preservation, and the more profitable utilization of farm crops. It carries on analytical and investigational work under the Food and Drugs Act, the Tea Inspection Act, and the Naval Stores Act, and makes chemical investigations for other branches of the government service.

History and Development. When the Department of Agriculture was organized as an independent department in 1862, a Division of Chemistry was set up. The organic act establishing the department (12 Stat. L., 387) had, in fact, authorized the Commissioner of Agriculture to employ chemists, botanists, entomologists, and other persons skilled in the natural sciences pertaining to agriculture. As originally conceived, the Division was to perform all the chemical work of the government,[1] but as the need

[1] Annual Report, 1924.

for chemists in other branches increased, they set up their own chemical services, so that now chemical work on soils, road materials, forestry, dairy products, meat, fish, supplies, commercial products, and various other materials is carried on in many different bureaus.[2]

As early as 1848 Congress passed a law (9 Stat. L., 237) preventing the importation of adulterated and spurious drugs and medicines, the enforcement of which devolved upon the Treasury Department. In 1890 investigations of the adulteration of foods were authorized (26 Stat. L., 285), and a law was also passed for the inspection of imported foods (26 Stat. L., 414). The Tea Inspection Act was adopted in 1897 (29 Stat. L., 604), and in 1900 an investigation of adulterated foods (31 Stat. L., 196) was authorized. In that year the Division had only twenty employees and received an appropriation of only $29,500. A small building of nine rooms, a converted residence, was occupied as an office. The Chief Chemist at that time was Dr. Harvey W. Wiley, who had been appointed in 1883 and who served until 1912. In 1901 the Division was raised to the status of a bureau, this change having been accorded recognition in the appropriation act of that year (31 Stat. L., 922). The act also authorized another investigation of adulterated foods.

In 1903 there was inaugurated a study of the methods of making better table syrup from the ordinary sugar producing plants, such as the maple tree, sorghum, and sugar cane. A model syrup factory was erected at Waycross, Georgia, and various manufacturing problems were taken up, with the result that many economies in production were achieved. In the same year a contracts laboratory was organized to test supplies furnished by contractors to the Government. Another laboratory was set up in 1903 for the purpose of examining drugs and chemicals. Many remedies and fake cures were investigated for the Post Office Department, a duty which is still undertaken.

The appropriation bill for 1903 (32 Stat. L., 296) authorized the Secretary of Agriculture " in collaboration with the Association of Official Agricultural Chemists and such other experts as he may

[2] See mimeographed report on chemical work in Department of Agriculture, issued by the Bureau of Chemistry.

deem necessary, to establish standards of purity for food products and to determine what are regarded as adulterations therein." This work was, accordingly, undertaken, though the authority was repealed after having been continued for several years. Investigations of adulterated foods and their relation to health were also authorized in these years, the Bureau then receiving an appropriation of about $150,000 a year.

The Pure Food and Drugs Act was approved on June 30, 1906 (34 Stat. L., 768), and became effective on January 1, 1907, when the actual work of enforcement began. Inspectors to collect samples and procure information, chemists to analyze these samples and conduct necessary investigations, and a Board of Food and Drug Inspection were added to the personnel of the Bureau. Branch laboratories were established at a score of localities, such as the principal ports of entry and commercial centers, and analyses were made either there or at the central office in Washington. For the six months ended June 30, 1907, a deficiency appropriation of $250,000 was made to carry out the act (34 Stat. L., 841) and in the next fiscal year the total appropriation to the Bureau aggregated nearly $700,000.

An exhaustive study of the various feeding stuffs on the market was completed in 1908. In addition to supplying data to purchasers and laying the basis for further studies of the nutritive value of stock food materials, this study was useful in the enforcement of the Food and Drugs Act. In the same year investigations of denatured alcohol were begun at a model distillery, which was erected for the purpose. Various farm products were also investigated and work on insecticides and fungicides was begun.[3]

The Bureau was reorganized in 1913 by Dr. C. L. Alsberg, who succeeded Dr. Wiley as Chief. Laboratories for protein, phytochemical, microbiological, and pharmacognological investigations were established, and an Office of Development, manned largely by engineers, was also set up. Regulation and research were separated as administrative functions, and as much of the regulatory work as possible was relegated to the field. The effectiveness of this new system was demonstrated in the following years by greater results from research and by an increase in the number of court actions under the Food and Drugs Act. Another notable

[3] Yearbook, 1912, p. 196 ff.

step in 1913 was the creation in the Bureau of an Office of State Coöperation.

By 1917 the Bureau was receiving an appropriation well in excess of a million dollars, more than $600,000 of which was devoted to the enforcement of the Food and Drugs Act. The published program of work for the Bureau during that year was ambitious and included many researches in agricultural chemistry, poultry and egg investigations, fish and shellfish investigations, biological studies of food and food products, color investigations, citrus by-products studies, investigations of naval stores and demonstration of methods of production, as well as the enforcement of the Food and Drugs Act.

Dr. Alsberg resigned as Chief of the Bureau in 1921, and was succeeded by the present chief, Dr. C. A. Browne, who was appointed on October 1, 1923.

Current Activities.[4] The major activity of the Bureau of Chemistry is the enforcement of the Food and Drugs Act of 1906, as subsequently amended.

Food and Drugs Act Enforcement.[5] The Food and Drugs Act, popularly known as the Pure Food Law, prohibits the manufacture or sale within any territory or the District of Columbia, or the importation, or shipment in interstate commerce of foods and drugs which are adulterated or misbranded. A fine of not more than five hundred dollars, or a year's imprisonment, or both, is the penalty for the first violation of the manufacturing clause, and a fine not to exceed two hundred dollars is imposed for the first violation of the interstate and foreign shipment clause. Penalties for subsequent violations are greater.

The Secretaries of the Treasury, Agriculture, and Commerce are charged with making uniform rules and regulations to enforce the law,[6] and the enforcement of the regulations has indubitably improved the foods and drugs of the nation. The act requires the Bureau of Chemistry to perform the analytical work necessary and requires district attorneys to prosecute in the proper courts

[4] See Bureau of Chemistry, Department Circular No. 137 (1924).

[5] See Department of Agriculture, Circular 21. Also Laws applicable to the United States Department of Agriculture (1923).

[6] Given in Circular 21. See also Linton, F. B. Protecting the consumer from food and drug frauds, *The Nation's Health,* October, 1925.

when evidence has been presented. "Drugs" is defined as including any medicine or preparation recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of man or other animals. "Food" is defined as including all articles, whether simple, mixed, or compound, used for food, drink, confectionery, or condiment by man or other animals.

The act further outlines specifically what are to be considered adulterations, in both the foods and drugs, and it expressly defines misbranding. Thus, adulteration applies to foodstuffs which are (1) Composed of filthy or decomposed materials, (2) cheapened by the substitution in whole or in part of another substance, (3) rendered injurious to health by any added deleterious ingredient, and (4) those from which valuable components have been removed. Misbranding of food consists of the use of an untruthful or misleading label, including omissions as well as direct falsification. Labeling which is truthful but deceptive on account of arrangement of type comes under this classification.

Patent medicines[7] come within the drug classification, and it is the duty of enforcing officers to see that their labels "hold out to the public no promise of benefit that is not fully justified by the composition of the preparation."[8] The law requires the quantities of certain dangerous and habit-forming substances contained in such patent medicines to be made known on the label.

The steps necessary in prosecutions under the law may be summarized as follows:

(1) An inspector collects samples of the suspected article and forwards them to the proper station for analysis.

(2) The station makes the analysis and reports on the samples to the station chief, who in turn reports with recommendation to the district chief.

(3) The district chief, if he approves a recommendation that the goods are in violation of the act, instructs the station to hold a hearing.

(4) The manufacturer appears or sends a statement about his product, following which the station chief again reports to the district chief.

[7] See section on the Patent Office, page 305.

[8] Bureau of Chemistry, Department Circular No. 137, p. 8.

(5) The district chief may then transmit the papers, with his recommendation, to the Chief of the Bureau.

(6) Here the case is reviewed, usually with the assistance of the laboratory specializing in the particular type of product.

(7) If, upon a review of the facts, the reviewing officer determines that prosecution is warranted, the case is referred to the Solicitor of the Department.

(8) If prosecution is found to be legally justified, the necessary records are prepared by the Solicitor and referred to the Department of Justice.

(9) The Department of Justice transmits the records for trial to the appropriate district attorney who conducts the case in court.

(10) The court hears the case and issues judgment.

(11) A notice of judgment is prepared by the Solicitor and published by the Bureau, which terminates the case.

Since the law was passed, more than twelve thousand seizures and prosecutions have been completed and the results published. During the fiscal year 1925, there were 746 prosecutions and 910 seizures. Goods may either be seized and removed from the channels of trade pending a court decision, or a criminal prosecution may be brought against the alleged violator of the law, or both actions may be taken. District attorneys may act directly, but most cases are referred to them through the Department of Justice.

Imported foods and drugs are denied entry to this country if they do not conform to the legal requirements. Foreign merchants must certify regarding the content of their wares before consular officers. Bureau of Chemistry inspectors examine the invoices of imported foods and drugs, bearing such certificates, and, if deemed desirable, take samples for analysis. If the goods do not comply with the requirements they will not be admitted, although a hearing will be granted to the manufacturer. Sometimes they may be relabeled, reconditioned, or denatured to meet the rules. In this work the Bureau has the coöperation of the Customs Service.[9] As it is not possible, with the force at hand, to inspect adequately all imported articles, only those thought to be adulterated or misbranded are examined.

Factory and Local Investigations. In order to reach goods at their source and aid manufacturers in remedying possible defects in making foods or drugs which are intended for shipment in

[9] See page 184.

interstate commerce, a systematic investigation of manufacturing plants is conducted.

The control of the purity of mineral waters shipped in interstate commerce is achieved largely by inspection of the sources of supply. Much educational work must be done to prevent contamination of such supplies. About one hundred wells and springs are inspected annually for this purpose.

Coöperation with States and Cities. Practically all the states have pure food and drug laws, in many instances modeled after the federal act. The Bureau of Chemistry, of course, exercises supervision only over such foods and drugs as are the subjects of interstate commerce. It maintains, however, an Office of Coöperation, which keeps in close touch with all state food, drug, feeding-stuff, and health authorities. It informs them of changes in the law or regulations and other administrative matters, acts as a clearing house for the interchange of information, and brings about a harmonious coöperation in the enforcement of the federal and state laws. According to the Food and Drugs Act, state health, food, or drug officers may collect and submit for examination to the bureau any product within the scope of the law.

The Office of Coöperation has also attempted to work out uniform methods of procedure for local officers.

Tea Inspection. Tea is subject to the provisions of the Food and Drugs Act and also of the Tea Inspection Act, as amended. The Tea Act provides for actual standards of quality of imported teas. The enforcement of this law was originally placed with the Secretary of the Treasury, but transferred to the Bureau of Chemistry in 1920. During the fiscal year 1925, 92,925,470 pounds of tea were examined and 84,137 pounds were rejected.

Naval Stores Act Enforcement. The enforcement of the Naval Stores Act (42 Stat. L., 1435), which was signed by the President on March 3, 1923, and went into effect June 1, 1923, has been assigned to the Bureau of Chemistry by the Secretary of Agriculture.

The act defines and establishes classes and grades for the several kinds of turpentine and of rosin, makes the rosin types prepared by the Bureau of Chemistry the United States official standards for rosin, authorizes the Secretary of Agriculture to revise or make new standards, requires the sale in interstate and foreign com-

merce of all turpentine and rosin under the standards provided, makes unlawful the use of words, parts, or derivatives of words resembling "turpentine" or "rosin," or of any misleading or false word or words in advertising, offering for sale, shipping, or selling anything which is not naval stores of the standards provided in the act. The law also authorizes the Secretary of Agriculture, upon request of interested persons, to examine and grade naval stores and to issue a certificate showing the analysis, classification, or grade, which certificate shall be *prima facie* evidence in any court. For this service the Secretary is authorized to make a charge to cover the cost of such work.

Research. Agricultural chemistry studies, the original function of the Bureau, have been extended in recent years. The prevention of losses by deterioration of fruits, vegetables, grains, sugars, syrups, and other foods, and the prevention of spontaneous combustion of agricultural products, are problems which have had special attention. The improvement of the quality of crops by increasing their protein and mineral content is another problem which has been considered. Protein investigations of food are made, and the vitamins are studied. The tanning of leather is studied in order that farmers may receive practical instructions for preparing hides and selecting and caring for their shoes, harness, driving belts, and other leather articles.

The chemistry of plant constituents and the vegetable fats and oils are studied. The more profitable use of cull and surplus fruits and vegetables is the aim of other work of the Bureau. Much experimental work has been done on the dehydration of foods.[10] The waterproofing, mildewproofing, and fireproofing of farm fabrics, and the use of wrappers for fruits and vegetables are studied. The Bureau makes biological investigations of food and drug products and the physiological effects of such products on the human organism. It develops methods for the manufacture of table syrups and sugar. It investigates chemical problems relating to the composition, manufacture, action, and application of insecticides and fungicides. It conducts experimental work in the utilization, for coloring, medicinal, and technical purposes, of raw materials grown or produced in the United States. It investigates

[10] See Commercial dehydration of fruits and vegetables. Department Bulletin 1335 (1925).

and develops methods for the prevention of grain dust, smut dust, and other plant dust explosions and fires, including fires in cotton gins and cotton-oil mills. It investigates and demonstrates improved processes for preparing, weighing, handling, transporting, and uses of rosin and turpentine. It collaborates with other departments of the government desiring chemical investigations whose heads request the Secretary of Agriculture for such assistance.

The investigatory activities of the Bureau of Chemistry include those pertaining to food control or drug control, a necessary supplement to the enforcement of the Food and Drugs Act, the Tea Inspection Act, and the Naval Stores Act, studies in agricultural chemistry, and chemical investigations for other bureaus and departments.

In order to determine when a food or drug is adulterated or misbranded, it is necessary to have standards for comparison. Thus, much of the research work has been devoted to investigations of products, so that such standards may be formulated. Critical studies of methods of analysis have also been made for various products. Supplementary to these studies have been investigations of commercial methods, whereby an attempt is made to evolve and perfect processes for the preparation of foods and drugs and the practical utilization of their by-products. Microbiological, microchemical and pharmacological investigations are conducted along all of these lines. Studies of cattle feeds are likewise under way.

Drug control studies are concentrated on (1) Medicinal tablets containing important therapeutic agents; (2) galenicals; (3) crude drugs, including herbs, leaves, barks, roots, flowers, seeds, etc.; (4) medicines offered for the treatment or prevention of serious diseases; (5) methods of analysis of drugs.[11] Under certain conditions, fraudulent medicines can be dealt with more advantageously under the postal laws than under the Food and Drugs Act. Therefore, many analyses are made for the Post Office Department.[12] Expert testimony is furnished in these cases at hearings and in court.

Publications. More than a hundred bulletins and circulars have been prepared and issued by the Bureau since 1913.[13] Many of these have a direct interest to sanitarians, and nearly all are of

[11] Annual Report, 1924, p. 20.
[12] See page 310.
[13] See mimeographed list of Bureau publications, 1913-1925.

indirect interest. In the early years, for instance, studies were made, in coöperation with the Bureau of Entomology on the destruction of fly larvæ in manure, and three bulletins were published on this subject (Nos. 118, 245 and 408). Department of Agriculture Bulletin 585, "A Guide for Formulating a Milk Ordinance," in which the Bureau of Animal Industry coöperated, and numerous bulletins and circulars on eggs, oysters, olives, dairy products, fish, bread, flour, fruits, poultry and cereals are of particular interest to health officers.

Organization. The Bureau of Chemistry maintains headquarters at Washington and branch offices and laboratories in the field. At the head of the organization are the Chief, an Assistant Chief, and an Administrative Assistant, who exercise general supervision over all work. Twenty laboratories and three offices in Washington develop facts upon which the decisions and policies are based, recommend methods for attacking regulatory problems, and conduct scientific investigations.[14]

The Bureau is further organized into an Office of Coöperation,[15] Office of Development Work, an Office of Imports, and a Tea Inspection Service. There are special technical administrative assistants, assistants to the chief, a librarian, and an editor.

Laboratories. The laboratories are as follows:

Analytical Reagent Investigations
Carbohydrate
Color Investigations
Crop Chemistry
Drug Control
Food Control
Fruit and Vegetable Chemical
Leather and Paper
Microbiological
Microchemical
Miscellaneous Division (including Cattle Feed and Insecticide and Fungicide)
Oil, Fat, and Wax
Pharmacological
Phytochemical
Protein Investigations
Special Collaborative Investigations
Water and Beverage

[14] Department Circular 137, p. 5.
[15] See p. 193.

Field Service. In order to enforce the Food and Drugs Act, the United States has been divided into three inspection districts: The Eastern, with headquarters at New York; the Central, with headquarters in Chicago; and the Western, the office of which is at San Francisco.

The Eastern District has stations at Baltimore, Boston, Buffalo, New York, Philadelphia, San Juan, and Savannah; the Central District has stations at Chicago, Cincinnati, Kansas City, Minneapolis, New Orleans, and St. Louis; and the Western District has stations at Denver, Los Angeles, San Francisco, and Seattle.

The work at these stations is for the most part regulatory, but some research is carried on. Each station serves a group of states.

Personnel. The total personnel is about six hundred, of whom approximately half are in the field. Of the total number, about half are technically trained, including chemists, bacteriologists, microscopists, engineers, and inspectors. Somewhat more than half of the personnel is employed directly in the enforcement of the Food and Drugs Act.

Appropriations. The total annual appropriation to the bureau is about one and a half million dollars. For the fiscal year 1925, $1,387,230 was appropriated, though an increase was estimated as necessary for 1926.

The appropriations for 1926[16] give a good indication of the relative fiscal importance of the various activities of the Bureau and so may be cited:

Salaries	$ 363,208
Agricultural chemical investigations	123,400
Collaboration with other government departments	14,090
Raw materials studies	54,805
Syrup and sugar studies	28,000
Enforcement of Pure Food and Drugs Act	788,860
Enforcement of Tea Act	40,690
Insecticide and fungicide studies	27,580
Dust explosion studies	26,555
Naval Stores Act	35,000
Total	$1,502,188

[16] 43 Stat. L., 822.

The Bureau of Animal Industry.[17] The Bureau of Animal Industry of the Department of Agriculture is concerned with the promotion of the livestock, meat, and poultry industry of the country, and the protection of the health of animals and man. It deals with the investigation, control, and eradication of diseases of animals, many of which are communicable to man; the inspection and quarantine of livestock; the inspection of meat and meat products; and with animal husbandry. It is the largest bureau in the Department, and with the exception of the Weather Bureau and the Bureau of Dairying, the only one formally created by statute, though others have been recognized by Congress in appropriation acts. It is also the oldest bureau in the Department, though much of its work is of recent origin.

History and Development.[18] The Federal government concerned itself with the animal diseases as early as 1860, when the Agriculture Division of the U. S. Patent Office issued a report on hog cholera. Two years later there was created a Department of Agriculture, though the head of this new department did not become a cabinet officer until 1889. During the twenty years following the establishment of the Department of Agriculture frequent recommendations were made that a veterinary division be created, but it was not until 1883 that such a division was authorized. At that time a seven acre farm in the District of Columbia was acquired as an experiment station.

On May 29, 1884, the President approved an act of Congress (22 Stat. L., 603), which established the Bureau of Animal Industry in the Department of Agriculture. The first important work of the Bureau was the eradication of contagious pleuro-pneumonia from the cattle of this country. The complete extirpation of this disease was accomplished in 1893 and its conquest was the first great achievement of the Bureau of Animal Industry.

The Bureau was organized into four divisions in 1891. They included the Inspection Division, the Division of Animal Pathology, the Division of Field Investigations and Miscellaneous Works, and the Division of Quarantine. The Division of Animal

[17] See Powell, The Bureau of Animal Industry. Institute for Government Research, Service Monograph No. 41.

[18] See Houck, U. G., The Bureau of Animal Industry. Published by the author, Washington, D. C. (1924).

Pathology had been previously the Bureau Laboratory and was in charge of Dr. Theobald Smith after 1884. Dr. Smith continued with the Bureau as chief of the Pathological Division until he resigned in 1895, to be succeeded by Dr. V. A. Moore. During the decade in which Dr. Smith conducted his experiments, many important discoveries of interest to public health were made. The transmission of disease by insects was proven, the diagnosis of glanders developed, the effect of bovine tuberculosis on human beings was exhaustively studied and the tuberculin test studied and applied. Dr. Smith was assisted in many of his experiments by Dr. E. A. de Schweinitz, who was appointed chemist of the Division in 1890, and who became chief of the Biochemic Division, when it was organized in 1896. Trichinosis was demonstrated in the early days, much work on rabies was done from 1899 on, and foot-and-mouth disease studied in the field in 1902 and 1908. The bacteriological study of milk was begun in 1898, while anthrax and botulism were investigated in 1916 and 1920, respectively. Many investigations were made of animal diseases, with notable accomplishments against Texas fever, hog cholera, dourine, necrobacilosis, blackleg, and the like.

As an aid to bringing about improvements in the dairy industry of the country, the Dairy Division of the Bureau of Animal Industry was formed in 1895. The first work consisted of a survey in the industry, while later, in 1900, a study of dairy sanitation was made. From 1902 the scope of this Division greatly broadened. Dairy research laboratories were organized in that year, and in 1905 a dairy farming section and a market milk section were added. An experiment farm at Beltsville, Maryland, was acquired in 1910, and breeding experiments were started in 1911. One of the accomplishments of this Division was the score-card system of dairy inspection, used by many health officers. Much other work on sanitation and food value of milk and milk products has been carried on. This Division became a bureau in the Department in 1924.[19]

Investigations in animal husbandry were begun in 1901, and this work, dealing largely with animal genetics and breeding, was organized into the Animal Husbandry Division in 1910. In 1906, Congress passed broad legislation (34 Stat. L., 679), covering meat

[19] See page 211.

inspection to supersede earlier acts of 1890, 1891, and 1895. This new act greatly enlarged the scope of this work. Regulations for meat inspection were issued in 1908, after having been passed on by a committee of sanitarians, including Dr. W. H. Welch, Dr. L. Hektoen, Dr. Joseph Hughes, Dr. V. A. Moore, Dr. L. Pearson, Dr. M. J. Rosenau, and Prof. Charles W. Stiles. Six years later, in 1912, the old Inspection Division was separated into the Meat Inspection and Field Inspection divisions. In 1913, a committee of sanitary experts, including Dr. V. A. Moore, Dr. M. P. Ravenel, and Prof. W. T. Sedgwick, studied and reported on the efficiency of the Federal meat inspection. The Field Inspection Division has coped with the extensive epizootics of foot-and-mouth disease in 1902, 1908, 1914-1915, and 1924, and has also done much work in the eradication of sheep and cattle scabies.

Although the study and eradication of tuberculosis in animals has been a function of the Bureau from early times, the Tuberculosis Eradication Division was not created until 1917. This Division has conducted campaigns for tuberculin testing and has carried on much propaganda for tuberculosis-free herds and areas. The importance of this work in relation to human health is shown by the investigations of Park and Krumwiede in New York, of Novick, Ravenel and others, who have demonstrated the transmissibility of bovine tuberculosis to children.

The relation of the cattle tick to Texas fever was one of the early discoveries of the Bureau, and the systematic eradication of the tick by cattle dipping was undertaken in 1906. Since that time more than 72 per cent of the originally infected area in the South has been freed of ticks.

Current Activities. The current activities of the Bureau consist of regulation in the interests of public health of various products which enter into interstate commerce; of scientific research; of extension work; and of the promotion of the livestock, meat, and poultry industry of the United States.

Regulatory Work. Regulation is the most conspicuous activity of the Bureau. It includes inspection of all meat intended for shipment in interstate commerce; the enforcement of laws governing the importation and interstate shipment of viruses, serums, and other biological products used for the prevention or treatment of animal diseases; examination of livestock presented for entry into

this country or shipped in interstate commerce; certification of imported breeding animals; prevention of cruelty to animals in interstate commerce; inspection and testing of animals and meats for export; and inspection and disinfection of animal by-products.

Meat inspection consists of an inspection of all cattle, sheep, goats, and swine before they are slaughtered in an official establishment, and examination of the carcass immediately after slaughter. All products passed are stamped by inspectors. Animals condemned before slaughter are disposed of so as to prevent their use as food, and those suspected are slaughtered separately from those which have been passed. This meat inspection is performed in nearly a thousand establishments in as many cities and towns.[20] In addition, market inspection is conducted in twenty-four cities. In 1924, nearly 80,000,000 *ante mortem* inspections and a slightly smaller number of *post mortem* examinations were made. Nearly 350,000 animals or carcasses were condemned, and about 1,360,000 parts were rejected as unfit for use.[21]

Sanitary supervision plays an important part in the meat inspection work. Standards have been prescribed by the Bureau and are enforced in the various establishments by the inspectors. Plans and specifications of all meat plants are submitted to the Bureau and must be approved before the product is permitted to go into interstate commerce. Operating methods and cleanliness of employees are also regulated and watched.

Extension Work. In coöperation with all the states much work has been undertaken in the eradication of animal diseases. Tuberculosis is the most significant of these, as it is responsible for three-quarters of the condemnations of carcasses. It is most common among dairy cattle, which constitute about one-third of all cattle in this country. Tuberculin for testing has been prepared by the Bureau since 1892 and furnished to Federal, state, and local inspectors. A nation-wide drive to extirpate tuberculosis in cattle has been conducted for several years. There are now more than ten million cattle under supervision and nearly seven million which have successfully passed the first test. Somewhat over a million are in fully accredited herds. The eradication of bovine tubercu-

[20] See Directory of the Bureau of Animal Industry (1925).

[21] See Lippman, W. H., Meat inspection as a public health measure. *Journal of the American Medical Association,* October 31, 1925, p. 1392.

losis is, of course, of importance in the campaign against the disease in man.

Other extension work involves such diseases as hog cholera, foot and mouth disease, tick fever, scabies, glanders, etc. During 1924, nearly forty million cattle were inspected or dipped for ticks in nearly a thousand counties. About thirty thousand farms were visited in that year in the interests of hog-cholera control. Much educational and demonstration work is carried on locally.

Research. Among the many studies and investigations which are made, there should be mentioned those on breeding and animal genetics; on feeding and care of cattle; on soft-pork problems; on management and handling of cattle; on methods of killing and dressing; and on farm work. The nutritive value of meat and meat products has been the subject of research and a comprehensive study of the content of vitamin A in beef, pork, and lamb was begun in 1923 and completed in 1924. A number of investigations are associated with the meat inspection service, such as the reason for unusual pathological conditions noted in such examinations, or the cause of parasitic conditions.

Publications. During its existence, the Bureau of Animal Industry has issued more than two thousand different publications, including reports of original scientific research, popular treatises, regulatory orders, circulars of information, administrative reports, and various miscellaneous pamphlets. The number of copies of individual publications furnished on request has frequently exceeded half a million, and the aggregate editions of all the publications are believed to have been a large factor in the successful development of the livestock industry.

Organization. The Bureau of Animal Industry is now organized into eleven divisions as follows:

Animal Husbandry Division
Biochemic Division
Division of Hog-Cholera Control
Division of Virus-Serum Control
Experiment Station
Field Inspection Division
Meat Inspection Division
Pathological Division
Tick Eradication Division
Tuberculosis Eradication Division
Zoological Division

In addition to the divisions, there are offices of Accounts, Chief Clerk, Personnel, Property Clerk, Editor, Exhibits, and Legal Advisor.

The Chief of the Bureau is Dr. John R. Mohler, who was appointed in 1917. The first chief of the Bureau was Dr. D. E. Salmon, who served from 1884 to 1905. The second chief was Dr. A. D. Melvin whose term of office was from 1905 to 1917. Dr. Mohler, the third chief, had previously been chief of the Pathological Division.

Animal Husbandry Division. This division conducts investigations and experiments in feeding, breeding, and management of live-stock and poultry.

Biochemic Division. This division is concerned with biochemical and bacteriological research affecting animal diseases, meat products, disinfectants, the production of tuberculin and mallein, and the analysis of dips and disinfectants.

Division of Hog-Cholera Control. This division carries on the field work against hog cholera. It directs field forces in various states, engaged in the investigation, suppression, and control of outbreaks of hog cholera and other infectious diseases of swine.

Division of Virus-Serum Control. This division has charge of regulatory work in the enforcement of the virus-serum toxin law, aimed to insure a high quality of commercial viruses, serums, toxins, and similar products for combating animal diseases.

Experiment Station. A veterinary experiment station is maintained at Bethesda, Maryland, for conducting necessary investigations. Its facilities are used by the various divisions. The scope of work includes investigations of animal diseases, such as tuberculosis, contagious abortion, and anthrax, and the production of serums, and various experimental studies.

Field Inspection Division. This division has charge of eradication of sheep scabies, cattle scabies, horse scabies, dourine, anthrax, influenza, etc. It supervises the interstate transportation of livestock. Its work is largely instrumental in locating and stamping out sources of disease by tracing infection to the locality from which animals were shipped. This division also directs work relating to importation and exportation of livestock, and importation of hides, skins, wool, hair, and similar products, especially with

regard to danger of transmitting infection through these commodities.

Meat Inspection Division. This division conducts meat inspection at slaughtering and processing establishments engaged in interstate and foreign commerce, supervises the transportation of meats, and inspects imported meats. It is organized into Western and Eastern divisions and also into sections of exports and imports; transportation, exemptions; laboratories sanitation and construction; labels; and records.

Pathological Division. This division conducts laboratory work relating to animal diseases, their control and suppression, including bacteriological and pathological investigations into causes of disease.

Tick Eradication Division. This division, in coöperation with authorities of various Southern states, conducts work of eradicating the cattle tick.

Tuberculosis Eradication Division. This division supervises the eradication of tuberculosis from cattle and swine in coöperation with state authorities and individual owners. During the fiscal year 1921 more than 75,000 herds of cattle were under supervision. Of these, 8201 herds comprising 193,620 cattle were fully accredited as free from tuberculosis. In all, 1,366,358 cattle were tested with tuberculin by veterinarians.

Zoological Division. The duty of this division is to conduct laboratory and field investigations of animal parasites.

Editorial Office. This office edits and distributes the publications of the bureau. It also prepares special articles on news material, plans motion pictures, does translating, conducts general correspondence relating to printed matter of the bureau, compiles statistics, issues a weekly summary concerning livestock matters and does other editorial work.

Exhibit Office. This office consults with the various officers of the bureau and prepares exhibit material for use at state fair circuits and at special shows.

Office of Personnel. This office keeps records of the bureau personnel; supervises veterinary colleges under the department's regulations, and performs duties of varied character.

Field Service. The field service is distributed among 146 stations, with a veterinary inspector usually in charge of each. The staff varies with local demands and is more or less mobile, being

shifted as exigencies arise. In 1924, for instance, an outbreak of foot-and-mouth disease occurred in California. Inspectors were hurried to the scene of the epizootic, and federal and state forces united under the direction of an officer from the Bureau of Animal Industry.[23]

Personnel. The total personnel of the bureau is about 4200, of whom some 3500 are engaged in meat inspection activities. Tick eradication and tuberculosis eradication come next, with about three hundred persons regularly engaged in each of these efforts.

Appropriations. The total appropriation to the Bureau of Animal Industry for the fiscal year 1926 was $11,385,156. This was allotted as follows:

Animal husbandry	$ 348,225
Inspection and quarantine	610,000
Hog cholera	431,363
Disease investigations	125,860
Tuberculosis eradication	982,000
Tuberculosis indemnities	2,578,000
Tick eradication	699,451
Dourine study	40,520
Meat inspection	4,896,110
General	673,627

There is a permanent specific annual appropriation of $3,000,000 for meat inspection, which is supplemented by a million dollars or more, according to the needs of the service. Of the sum for tuberculosis eradication, about two and a half million is for the payment of indemnities.

The Bureau of Home Economics. The Bureau of Home Economics of the Department of Agriculture has charge of investigations, connected with the home, such as foods and nutrition, economic problems, textiles and clothing, and housing and equipment. The bureau was established as such in 1923, though it had been in operation as a division of other bureaus in the Department for a number of years.

History and Development. The first distinct Federal appropriation for a study of nutrition was made in 1894 when, on recommendation of the Secretary of Agriculture, Congress appropriated $10,000 to "enable the Secretary of Agriculture to inves-

[23] See Annual Report, 1924.

tigate and report upon the nutritive value of the various articles and commodities used in human food, with special suggestion of full, wholesome, and edible rations less wasteful and more economical than those in common use." (Act of August 8, 1894; 28 Stat. L., 271). The agricultural experiment stations were authorized by the act to coöperate with the Secretary in carrying out these investigations "in such manner and to such extent as may be warranted by a due regard to the varying conditions and needs of the respective states or territories, and as may be mutually agreed upon."

The supervision of these investigations was, accordingly, turned over to the Office of Experiment Stations,[23] of which Dr. W. O. Atwater was director, and a headquarters for the study was established at Middletown, Connecticut. The work of the first year included: studies of the cost and nutritive value of food material in every section of the country in order to determine what kinds of food the people actually buy; studies of actual dietaries, of the digestibility of foods, of the laws of nutrition of man, including experiments regarding ways in which food is actually used in the body; compilation of the results of researches conducted in various countries; and the publication of technical and popular bulletins. These investigations were in subsequent years expanded to include studies of food supply and food consumption in this country, experiments to compare the nutritive value and economical use of various combinations of food materials, investigations of the effect of cooking upon nutritive values, studies of the heat of combustion of food materials, experiments with the respiration calorimeter, and metabolism experiments.

Between 1896 and 1900 the annual appropriations for these nutritional studies were $15,000. In 1901 it was $17,500, and from 1902 to 1907, $20,000, yearly. The work was then discontinued for two years to be resumed in 1910 under a new law (35 Stat. L., 1056), which changed the scope of the work to include investigation of "the nutritive value of agricultural products used for human food, with special suggestions of plans and methods for the more effective utilization of such products for this purpose, with the coöperation

[23] See Conover, The Office of Experiment Stations. Institute for Government Research, Service Monograph No. 32 (1924).

of other bureaus of the department . . . ." This arrangement continued with appropriations varying from $10,000 to $16,000 a year until 1915, when the functions were broadened to include investigations of "the relative utility and economy of agricultural products for food, clothing, and other uses in the home, with special suggestions of plans and methods for the more effective utilization of such products for these purposes, with the coöperation of other bureaus of the department . . . ." (38 Stat. L., 438).

The appropriation act of March 4, 1915, enabled the Secretary of Agriculture to reorganize the work in agricultural education into a States Relations Service, and the nutritional and home economics studies were conducted thereafter in the Office of Home Economics in this Service. Appropriations were larger, increasing from $25,760 for the fiscal year 1915 to $50,000 for the year 1923. Pursuant to the terms of the annual Appropriation Act of February 26, 1923 (42 Stat. L., 1315), the Office of Home Economics became a separate Bureau in the Department of Agriculture and Dr. Louise Stanley was appointed as Chief. For the fiscal year 1924, the Bureau received an appropriation of $71,760, which was increased to $107,024 for 1925.

Under the States Relations Service, the Office of Home Economics conducted technical research on subjects pertaining to food, clothing, household equipment, and household labor, and disseminated much popular information through many bulletins. The information derived from regular research was also sent to the county agents and other extension workers of the Department in order that they in turn might transmit it to the people. An endeavor was made to interpret all technical studies in a popular way, so that they would be understandable and useful to all housewives and others interested. Many requests for information also came from foreign countries and much of the data developed was published in foreign journals. Prior to the year 1916, the Office had available 132 publications on nutrition, sixty-two of which were of a technical nature.

A laboratory kitchen was early established by the Office in order to study the chemistry and physics of cooking processes, tests methods of cooking, work out standard recipes, and provide data for publications to answer numerous inquiries. Some of the

investigations undertaken included: a determination of the causes of the differences in the culinary quality of granulated and smooth fats; tests of the cooking qualities of soft pork products from hogs fed on peanuts as compared with the cooking qualities of the usual grades of pork; studies of relative economy and flavor of grades of meat cooked by standardized methods, made at the request of the Bureau of Animal Industry and the Bureau of Markets. Other studies were made of home canned vegetables, data being compiled to indicate the percentage of spoilage of thousands of cans of vegetables when all the several home methods of processing had been employed. Digestibility of animal fats and vegetable fats was investigated, as was also that of very young veal and of the hard palates of cattle. The use of starch in potatoes was studied and experiments were conducted with maize, feterita meal, and Kaffir corn. Research on various uses of honey was likewise conducted. Cold storage problems and methods for the transportation of perishable fruit were worked out with the aid of the respiration calorimeter. Studies on the digestibility of fish were made in co-operation with the Bureau of Fisheries.

Among the subjects pertaining to domestic science and home economics which have been studied are: attempts to discover the amount of human energy expended in the performance of household tasks; investigations of textiles and their care; improvements in labor saving devices in the home; development of home-made fireless cookers; care of floors and floor coverings; and various other household matters.

Current Activities. The investigations of the Bureau of Home Economics endeavor to set up standards which will guide the housewife in her home demands, especially those which promote health, efficiency, and general well-being. Studies are, therefore, made on foods and nutrition, on economic factors, on textiles and clothing, and on housing and equipment.

The food and nutrition work, to which more attention has been devoted than to any other function of the Bureau, was curtailed slightly during 1925 in order to permit expansion in other home economics studies. Food studies which were carried on consisted of research on soft flour; on home canning, including color changes in fruit preserves, and meat canning processes; and on the

chemical composition of American food materials, an earlier bulletin on this subject having been revised. A dietary manual for diabetics was prepared in 1925 and sent out in mimeographed form in order to get suggestions for changes to improve its usefulness. This pamphlet was prepared with the coöperation of a number of dietitians and physicians. Special studies of institutional diets for children and of general expenditures for foods have also been undertaken. At the request of the General Federation of Women's Clubs, a program on nutrition has been drawn up for club women.

Of particular interest in the field of child hygiene is a study of the psychology of child feeding. Believing that mothers are in need of facts and practical suggestions for the solution of behavior problems associated with food refusals of children, the bureau has undertaken to ascertain the causes and remedies of food likes and dislikes of children. Facts were collected by a questionnaire circulated through the Merrill-Palmer Nursery School of Detroit, and the American Association of University Women. The bureau feels that the data obtained will be of value not only to mothers, but also to pediatricians, nutrition workers, public health nurses, and others concerned with the solution of child welfare problems.

Economic studies consist of the inquiries into food costs and expenditures already mentioned, and studies of standards of living on farms, this investigation being made with the coöperation of the Bureau of Agricultural Economics. A study of clothing expenditures is under way, as is also one on the handling of family finances. The use of time by the homemaker has been the subject of research.

The laundry problem is looked into by the textile and clothing division, home sewing practices are investigated, and a study of the designs used in children's clothing and their relation to habit formation was recently initiated. Other work on fabrics has likewise been undertaken.

During the fiscal year 1925 the personnel of the Bureau consisted of forty persons, of whom twenty were professional workers and twenty were clerical.

Publications. Reports of the results of research activities are issued in popular and technical form in the regular series of

bulletins of the Department of Agriculture. The following list of some of the more important pamphlets which are still available will give a good indication of the kind of work conducted by this Bureau:

Food for Young Children. By Caroline L. Hunt. Farmers' Bulletin No. 717. 21 pp. Issued March 4, 1916; Revised June, 1920.

Food for Farm Families. By Helen W. Atwater. Separate No. 858 from Yearbook, 1920. 13 pp.

Floors and Floor Coverings. Farmers' Bulletin No. 1219. 29 pp. September, 1921.

Rice as Food. Farmers' Bulletin No. 1195. 21 pp. December, 1921.

How to Select Foods. 1922.

I. What the Body Needs. Farmers' Bulletin No. 808.

II. Cereal Foods. Farmers' Bulletin No. 817.

III. Foods rich in Protein. Farmers' Bulletin No. 824.

Good Proportions in the Diet. By Caroline L. Hunt. Farmers' Bulletin No. 1313. 22 pp. March, 1923.

Lamb and Mutton and Their Use in the Diet. Farmers' Bulletin No. 1324. 13 pp. June, 1923.

Food Values and Body Needs Shown Graphically. By Emma A. Winslow. Farmers' Bulletin No. 1383. 35 pp. November, 1923.

Milk and Its Uses in the Home. (Prepared in coöperation with the Dairy Division of the Department of Agriculture.) Farmers' Bulletin No. 1359. 18 pp. Issued July, 1923; Revised January, 1924.

Family Living in Farm Homes. By E. L. Kirkpatrick, of the Bureau of Agriculture Economics; Helen W. Atwater and Ilena M. Bailey of the Bureau of Home Economics. Department Bulletin No. 1214. 35 pp. January, 1924.

Digestibility of Raw Starches and Carbohydrates. By C. F. Langworthy and Alice Thompson. Department Bulletin No. 1213. 15 pp. February 28, 1924.

Time-Tables for Home Canning of Fruits and Vegetables. Miscellaneous Circular No. 24. May, 1924.

School Lunches. By Caroline L. Hunt. Farmers' Bulletin No. 712. 21 pp. Issued March, 1916; Revised June, 1922, and May, 1924.

Corn and Its Uses as Food. Farmers' Bulletin No. 1236. 24 pp. Issued February, 1923; Revised July, 1924.

Housecleaning Made Easier. By Sarah J. MacLeod. Farmers' Bulletin No. 1180. 18 pp. Issued January, 1921; Reissued September, 1924.

Selected List of Government Publications on Foods and Nutrition (mimeographed). Compiled by Ruth Van Deman. Revised January, 1925.

Selected List of Government Publications on Textiles and Clothing (mimeographed). Compiled by Ruth Van Deman. February, 1925.

Organization. The Bureau of Home Economics was in 1925 organized into four divisions, dealing respectively with: Foods and nutrition; economic studies; textiles and clothing; and housing and equipment. The functions of each of these divisions have been outlined by the Bureau as shown on page 212.

The Bureau of Dairy Industry. The Bureau of Dairy Industry of the Department of Agriculture investigates problems relating to all phases of the dairy industry. Projects undertaken include studies of: bacteriology and chemistry of milk; breeding and nutrition of dairy cattle; management of dairy cattle; dairy sanitation; dairy plant management; market milk; manufacture of dairy products and by-products; and the introduction of new principles and methods of dairying.

This Bureau was established as the Bureau of Dairying by an act of May 29, 1924 (43 Stat. L., 243), though the work had previously been conducted for many years by a division in the Bureau of Animal Industry. The change of name was made in 1926.

History and Development. In order to bring about improvements in the American dairy industry, a Dairy Division was organized in the Bureau of Animal Industry of the Department of Agriculture on July 1, 1895, although this organization was not legally recognized until 1897, when Congress in the agricultural appropriation act (Act of April 25, 1896; 29 Stat. L., 99) provided for several divisions in the Bureau, including the Dairy Division. The early work consisted of the collection of information of value to the industry and the dissemination of information. A survey of the dairy industry was made and several bulletins were issued. Experimental exports of butter were begun in 1897 and continued during 1898, and in the following year the possibilities of developing an export trade were studied.

Dairy sanitation first occupied the attention of the division in 1900. At that time a report on the milk supplies of two hundred cities was issued. In 1901 dairy products intended for exporta-

Foods and nutrition	Economic studies	Textiles and clothing	Housing and equipment
Food selection and meal planning from the standpoint of health and economy. Dietary studies. Chemical composition of food materials. Home methods of food preservation. Utilization of new food products. Comparative cooking qualities, grades, and varieties of foods. Utilization of soft wheat flour in home baking. Vitamin content of foods.	Economics of consumption. Standards of living. Costs of living. Consumption statistics. Family budgets and accounts. Economics of housekeeping. Time studies. Economic value of housework. Evaluation of housekeeping services (family, commercial, and coöperative). Economic relationships within the family.	Textile composition and construction from the standpoint of the consumer. Simplified methods of clothing construction. Costume design and other related art problems. Hygiene of clothing. Renovation and care.	General aspects of the housing situation. House planning for health and convenience. Kitchen arrangement and equipment.

tion were made subject to the terms of the Meat Inspection Act of 1891 (Act of March 2, 1901; 31 Stat. L., 922, 926). Market milk investigations were started in 1905, and the collection of information on bacteria found in milk and methods of studying them was begun. One of the notable developments along this line was the dairy score card for use in sanitary inspections. This card is now employed by health officials all over the country. Milk and cream contests were inaugurated in 1906 in coöperation with state and municipal health authorities. Dairy manufacturing investigations commenced in this same year and field work with individual creameries was begun the following year.

Funds for the promotion of the dairy industry in the Southern states "by conducting experiments, holding institutes, and giving object lessons in coöperation with individual dairymen and state experimental stations" were authorized by the agricultural appropriation act for 1907 (Act of June 30, 1906; 34 Stat. L., 669, 674), though this type of activity had been in operation since 1905. By 1920 this work had been so well developed that it was assumed entirely by state agricultural colleges and the department withdrew from this field. Other coöperative experiments included those on dairy and livestock production, carried on in the semi-arid and irrigated districts of the West since 1917 (by Act of August 11, 1916; 39 Stat. L., 446, 491), extension work in Pacific Coast and Rocky Mountain states, begun in 1910, livestock demonstrations in the cane-sugar area of Louisiana, dating from 1914; and various other activities with local groups.

An experimental farm was acquired at Beltsville, Maryland, in 1910 (Act of March 4, 1909; 35 Stat. L., 1039, 1043), and in the same year a model dairy was set up at the United States Naval Academy at Annapolis. Since 1902 the Division (Bureau) has supervised the manufacture of from 50,000 to 100,000 pounds of butter each year for the Navy Department. Renovated butter has been inspected since 1902.

The use of cottage cheese as a food, in order to eliminate waste of skim milk, was encouraged by a national campaign in 1918 and stimulation of the consumption of milk was undertaken in 1919 as an after-the-war measure. Campaigns to this end were directed in coöperation with the States Relations

Service, local health officials and voluntary dairy organizations. Milk transportation studies were also conducted in this year and the care of milking machines came in for attention. In 1920 much of the dairy extension work had to be discontinued on account of the curtailment of funds.

Current Activities. A large part of the current activities of the Bureau is concerned with public health, though most of it also has an economic aspect. Many studies are conducted on milk handling and dairy sanitation. Cow testing work is carried on in coöperation with state extension forces or other state agencies, and bull associations are likewise organized. The purpose of this work is to improve the breeding of dairy cattle and increase the quality and quantity of milk production.

In connection with the milk production investigations, the additional expense attributable to the use of modern methods and equipment is determined. In the milk distribution studies, attention is given to the factors influencing the commercial quality of milk and to the devising of better methods of preparation and handling; and cost figures are obtained for each of the various operations. "Milk-for-health" campaigns, promoted by state agricultural colleges and other extension agencies, are encouraged and given practical assistance in movements to increase the consumption of milk.

A series of milk studies has to do with condensing methods and with the preparation of a product that will maintain its quality. A series of butter studies is concerned with the factors that control flavor, including methods of handling cream, pasteurization, ripening of cream, storage, and renovation. Information is gathered as to the conditions under which milk and cream are handled, the qualitative effect of cream-grading, and the different operations involved in the manufacture of butter, with particular reference to costs and other factors in the efficient management of creameries. Cheese factory methods and equipment are subjects of investigation as well as the factors producing the peculiar flavors and physical characters of various types of cheese and the possibility of producing in this country the types now imported. An attempt is made to determine localities where cheese might be produced and to stimulate local interest in the establishment of cheese factories. Studies are made of the methods of utiliza-

tion of the by-products of creameries and cheese factories by converting them into products useful in the arts or available as food for man or animals. Attention is also given to the methods and conditions necessary for the manufacture of condensed and evaporated milk and ice cream.

Laboratory studies are made to obtain definite information as to the physiology of milk secretion and nutrition of dairy cows, and as to the net energy produced by different feeds and the distribution thereof between fattening and milk secretion. These studies are related fundamentally to the experiments in feeding, which are designed to determine the effects of the various feeds and constituents of feeds upon the animal body, upon growth, and upon the yield and composition of milk.

Milch cows are kept under different stabling conditions and the results measured by the milk and butter fat produced and economy of feed and labor. Experiments are made to determine the effects of watering at different intervals and in different quantities. Studies are made of actual dairy farm practice to secure data on milk production, including costs under average and under improved conditions. This work, of course, has important hygienic aspects.

One of the fundamental projects relating to milk has for its purpose the securing of complete and detailed information as to the bacteria occurring in milk and the development of methods of preventing contamination and of destroying harmful groups of bacteria in milk. Sanitary considerations are, in fact, prominent throughout all of the work of the bureau relating to milk. In connection with the milk production studies, the additional cost attributable to modern sanitary methods is determined. In connection with the work on housing and care of dairy cattle, the results of clean cows, clean stables, and properly sterilized utensils are shown in terms of bacterial count. Attention is also given to the sanitation of city milk supplies, in coöperation with state and local boards of health and dairymen.

Publications. Among the many bulletins and pamphlets issued by the Bureau, or under its auspices as a division in the Bureau of Animal Industry, the following may be mentioned as of special interest to sanitarians and health officials:

The Four Essential Factors in the Production of Milk of Low Bacterial Content. By S. H. Ayers, L. B. Cook, and P. W. Clemmer. Bulletin No. 642. April 30, 1918.

Straining Milk. By E. Kelly and J. A. Gamble. Farmers' Bulletin No. 1019. Jan. 1919.

Cooling Milk and Storing and Shipping it at Low Temperatures. By J. A. Gamble and J. T. Bowen. Bulletin No. 744. Jan. 17, 1919.

The Present Status of the Pasteurization of Milk. By S. H. Ayers. Bulletin No. 342. Issued 1916, revised Oct. 10, 1922.

Milk Plant Operation. By C. E. Clement. Bulletin No. 973. June 5, 1923.

Cleaning Milking Machines. By L. H. Burgwald. Farmers' Bulletin No. 1315. March, 1923.

Inspection of Milk Supplies. By E. Kelly and C. S. Leete. Department Circular No. 276. July, 1923.

Production of Clean Milk. By E. Kelly. Farmers' Bulletin No. 602. Issued 1914, revised Nov. 1923.

Posters Prepared by School Children in Milk-For-Health Programs. By Jessie M. Hoover. Miscellaneous Circular No. 21. August, 1924.

Milk and its Uses in the Home. (In coöperation with Bureau of Home Economics.) Farmers' Bulletin No. 1359. Issued 1923, revised Jan. 1924.

Organization and Personnel. The Bureau of Dairy Industry is now organized into eight divisions, as follows:

Dairy Extension
Dairy Introduction
Market Milk Investigations
Dairy Manufacturing
Dairy Cattle Breeding Investigations
Research Laboratories
Dairy Engineering
Dairy Statistics

Much work is done in the field at stations at Huntley, Montana; Ardmore, South Dakota; Woodward, Oklahoma; and New Iberia, Louisiana. The research laboratories are in Washington.

The personnel authorized for 1925 was about 150 of which about half were scientists and technical experts.

The appropriation for the fiscal year ending June 30, 1925, amounted to about $400,000.

The Extension Service. Agricultural extension, as carried on by the Department of Agriculture, consists of aid to the people of the rural sections by giving them practical instruction in farming, home economics, and other useful matters. In coöperation with the states, county agents are employed, farm bureaus and other farmers' organizations encouraged, home demonstration agents supported, and boys' and girls' clubs maintained. All of these activities have both a direct and indirect bearing on the public health. The home demonstration agent, for instance, is frequently the only social service worker in a rural region, and it seems always to have been considered that her duties properly included instruction and advice regarding sanitation, home nursing, and the preparation, care, and use of food. The boys' and girls' clubs are also known as the 4-H clubs, one of the H's standing for health. The extension service is, in fact, a potent force in rural hygiene.

History and Development. Extension work had its inception in 1904 when the Department attempted to show the farmers of Texas how to cope with the Mexican cotton boll weevil. In 1906 the first county agent was employed, and in 1911 the first farm bureau was organized. Home demonstration began in 1910, when a tomato club for girls was started in Aiken County, South Carolina. The scope of this work was broadened and it grew rapidly in the early years with the financial assistance of the General Education Board of the Rockefeller Foundation. Finally, in 1914 the Smith-Lever act (38 Stat. L., 372) was passed by Congress, under the terms of which $10,000 a year is permanently appropriated to each state, and, to quote the statute, "There is also appropriated an additional sum of $600,000 for the fiscal year following that in which the foregoing appropriation first becomes available, and for each year thereafter for seven years a sum exceeding by $500,000 the sum appropriated for each preceding year, and for each year thereafter there is permanently appropriated for each year the sum of $4,100,000 in addition to the sum of $480,000 hereinbefore provided."

These sums are allotted to the states in the proportion that the rural population of the state bears to the total rural population of all the states.

In order to administer this act, a States Relations Service was created in the Department of Agriculture in 1915. It had four divisions, the Office of Extension Work in the South, the Office of Extension Work in the North and West, the Office of Home Economics, and the Office of Experiment Stations, the last named having previously been a separate unit in the department since 1888. A reorganization occurred in 1923, when the Extension Service was made a branch of the immediate office of the Secretary, and the Bureau of Home Economics, and the Office of Experiment Stations were set up as separate units in the department. To the Extension Service were transferred the Office of Exhibits and the Office of Motion Pictures of the Division of Publications. The Extension Service is not exactly coördinate with the bureaus of the department, but serves as the clearing house and means of contact for all extension work of the department.

The growth of the home demonstration work since 1910 is shown by the following table, giving for each year the number of counties having home demonstration agents:[24]

Year	Counties	Year	Counties	Year	Counties
1910	4	1915	350	1921	699
1911	21	1916	430	1922	801
1912	149	1917	537	1923	874
1913	199	1918	1715	1924	930
1914	279	1919	1049	1925	929
		1920	784		

Financial support from 1910 to date is given in the following table, which indicates the total allotment of funds from all sources for home demonstration agents and also home economics specialists:

Fiscal year	Home demonstration	Fiscal year	Home demonstration	Home economics specialists work
1911	$5,000.00	1919	$2,889,210.00	
1912	39,939.77	1920	2,177,024.00	$332,415.00
1913	61,628.69	1921	2,388.473.00	300,147.00
1914	131,574.29	1922	2,980,741.00	386,979.00
1915	319,823.00	1923	3,012,303.00	538,887.00
1916	519,867.00	1924	3,099,464.00	601,548.00
1917	741,680.00	1925	3,172,354.00	582,710.00
1918	2,226,228.00			

[24] Frysinger, Grace E., Demonstration work, 1922. Department Circular No. 314.

Current Activities. The types of work conducted by the home demonstration agents, as listed in the reports issued by the Department of Agriculture, are illuminating in their display of an interest in public health. Of a total number of "improved practices" reported in 1923,[25] amounting to over five million, resulting from over a million demonstrations in about six hundred counties in forty-four states, there are listed 112,463 of these "improved practices," as related to health and sanitation, including such items as child care, home nursing, sanitation, and unclassified. "Improved practices" in nutrition, comprising food selection, food preparation, school lunches, child feeding, milk feeding, and unclassified, number 439,794.[26] Other items include food production, food preservation, clothing and textiles, home management and furnishings, and community activities.

Work for farm homes in counties without home demonstration agents was also reported[27] by county agricultural agents coöperating with state home economics specialists and, among other things, comprised encouragement of hot school lunches, home water systems, milk for children, septic tanks, and food supplies. Among accomplishments listed for these county agents in 1922 were:

Water systems planned and installed	2,447
Sewage disposal systems planned and installed	2,107
Lighting systems planned and installed	5,883
Farms homes constructed or remodeled according to plans furnished	10,063
Home grounds improved according to plans furnished	17,737
Homes modifying practice relative to gardening	58,575

The responsibilities of the home demonstration agent are extremely broad in scope. According to the 1922 report, "The county home demonstration agent contributes through educational methods to the progress of the rural people of the county in which she is working along lines affecting the home. Practically no limitations have been placed as to the manner of developing the work, thus leaving to agents every opportunity for ex-

[25] See Coöperative Extension Work, 1923. U. S. Dept. of Agriculture, Washington, D. C.

[26] See Birdseye, M., Extension work in foods and nutrition, 1923. Department Circular 349.

[27] Hochbaum, H. W., Methods and results of coöperative extension work, 1922. Department Circular 316; also Ervin, G., Extension work in agricultural engineering, 1923. Department Circular 344.

pressing their ingenuity and resourcefulness, as well as their ability to coöperate with individuals and organizations." Programs of work are based on specific local problems. Methods of extension teaching have included demonstrations, tours, use of the press, exhibits, campaigns, score cards, contests, use of motion pictures, bulletins, short courses, camps, plays and pageants, and various miscellaneous procedures.

Results in health activities were outlined in the 1922 report as follows:

> The outstanding work in the health project has been the visualization to rural people of positive standards of health for adults and children, which inspired them to desire to attain health individually and to obtain community sanitary conditions tending to promote health. The health project was carried on as a separate project in seventeen states, with the result that more than thirteen thousand houses were screened, and nine hundred septic tanks were installed. Since in many rural communities the services of doctors and nurses are difficult to obtain, and sometimes at such expense as to be almost prohibitive, the information from the Extension Service as to preventive and simple curative measures and the proper care of the patient until the doctor arrives has been of distinct help to the rural people receiving such information. One health measure which has been an outgrowth of the nutrition work is the dental clinic. Such clinics have met a real need in rural sections where dentists are not readily accessible. Many states emphasized the health phase of the work in the development of every project.

In 1923, 16,075 demonstrations in home health and sanitation were reported, and 674 county agents said that 112,463 home makers had adopted better sanitary practices during the year.

Boys' and girls' club work, or junior extension service, has shown its development by an increase in project enrolment from 115,291 in 1912 to 600,957 in 1922. In 1923, 722,508 projects were undertaken by the 459,074 different boys and girls enrolled. Reports for 1925 show an even greater increase, exceeding the growth for 1924, which in turn was larger by 51,000 members than in 1923. In 1922 there were reported[28] 28,194 organized clubs, "of which 8072 were standard," "whereas in 1924 there

[28] Hobson, Q. L., and Warren, G. L., Boys' and girls' club work, 1922. Department Circular No. 312.

were 38,120 clubs. The purpose of these clubs is to encourage boys and girls to become interested in assuming more responsibility in the work of the farm and home.[29] Food, hot school lunches, clothing, crops and livestock are some of the subjects considered. During 1924, for instance, 2077 clubs were stated [30] to have studied home health and sanitation measures.

Organization and Personnel.[31] The personnel of the Extension Service comprises nearly four thousand workers, of whom about 3800 are in the field. In addition, about one thousand other persons, not in the employ of the national government, are engaged in this type of activity. Of the federal employees, about 950 are home demonstration agents, over two thousand are in county agent work, 130 or more in boys' and girls' club work, and nearly three hundred engaged in extension work for negroes.

The Service has an Office of Coöperative Extension Work, and Offices of Motion Pictures and Exhibits. The coöperative extension office has divisions of visual instruction and publications, reports and efficiency studies, and subject matter specialists. In addition, there are regional subdivisions in the Northeastern states, the Southern states, the North Central states, and the Western states. There is a state director in each state.

The total annual appropriation to the Service amounts to about seven and a half million dollars, of which $4.580,000 represents the permanent specific appropriation under the Smith-Lever Act. Total funds available from all sources during the fiscal year 1924 amount to nearly twenty million dollars, about 37 per cent coming from the Federal Government.

The Bureau of Entomology. The Bureau of Entomology studies insects in their economic relation to agriculture and agricultural products and to the health of man and animals; experiments with the introduction of beneficial insects; makes tests with insecticides and insecticide machinery; and identifies insects sent in by inquirers. Of an appropriation for 1925 of nearly two million dollars, $64,630 was for the study of insects affecting the health of man and animals. Of this sum, however, the greater

[29] See Tisdale, E. S., and Tobey, J. A., Health in the hills of West Virginia, *The Nation's Health*, July, 1923. A description of a local 4-H project.

[30] *Official Record*, Aug. 19, 1925.

[31] See Coöperative extension work, 1923. Department of Agriculture.

part goes into work relating to the influence of insects on the health of animals.

Active entomological work by the government dates from 1877 when an Entomological Commission, consisting of three skilled entomologists was appointed by the Secretary of the Interior in accordance with an act of March 3, 1877 (19 Stat. L., 357). The duties of this Commission were to report upon the depredations of the Rocky Mountain locusts in the Western states and Territories and the best method of coping with them. The Commission was transferred to the Department of Agriculture by acts of June 16, 1880 (19 Stat. L., 344), and March 3, 1881 (21 Stat. L., 259). The Division of Entomology became a Bureau in the Department of Agriculture by the appropriation act of April 23, 1904 (33 Stat. L., 289). At that time it received an appropriation of $82,450.

During its whole existence the Bureau of Entomology has had but one chief, Dr. L. O. Howard, who was appointed assistant entomologist in 1878, and became Chief of the Division in 1894. In 1904 he was also appointed consulting entomologist for the Public Health Service, though the number of consultations he has been called upon for have not been great. Due to Dr. Howard's medical training, he became interested late in the nineteenth century in the subject of mosquitoes and other insects in their relation to the health of man, and thus the Bureau undertook a number of studies along these lines and Dr. Howard was one of the first to publish books on mosquitoes [32] and flies.[33]

The fact that malaria is carried by a certain genus of mosquitoes, *Anopheles,* was discovered by Dr. (later Sir) Ronald Ross in 1897, and was immediately confirmed by other investigators. Several years later, after the somewhat unfortunate experiences of our Army with disease in the War with Spain, an American army commission demonstrated that yellow fever was also spread by mosquitoes of a genus now called the *Ædes calopus.* This discovery was made in Cuba in 1900 by Dr. Walter Reed, with the coöperation of Drs. James Carroll, Jesse W. Lazear, and Aristides Agramonte, and during the course of the ex-

[32] Mosquitoes, how they live, how they carry disease, and how they may be destroyed (1901).

[33] The house fly (1911).

periments, Dr. Lazear was himself accidentally bitten by an infected mosquito and died of yellow fever.[34] Enlisted men of the United States Army volunteered, with the sanction of General Leonard Wood, to assist in the experiments. The practical results of this work were the riddance in Havana of yellow fever by Colonel Gorgas and the later construction of the Panama Canal, made possible by sanitary measures freeing the region from this scourge. In 1905 when yellow fever broke out in New Orleans, vigorous anti-mosquito measures under direction of officers of the Public Health Service successfully prevented a severe epidemic, such as that seaport had often seen in the past.

With all of this work Dr. Howard was closely in touch. In 1911 the Bureau issued pamphlets on malaria and on remedies and preventives against mosquitoes. Other early bulletins included those on flies, fleas, and ticks, by means of which various diseases may be spread. The magnitude of the problem of insects and health is shown by the fact that more than two hundred diseases have been shown to be carried by insects, though many of these are tropical.[35] Among the more important, in addition to the mosquito-borne infections, are: typhus fever, spread by body lice; bubonic plague, carried by fleas; Rocky Mountain spotted fever, spread by ticks; typhoid fever, disseminated by flies; and sleeping sickness, by tsetse-flies.

At the time of the American military expedition into Mexico in 1916, the Bureau issued a pamphlet entitled "Important insects which may affect the health of men or animals engaged in military operations." In 1922 it made an incursion into sanitary engineering and published a bulletin on "Impounding water in a bayou to control breeding of malaria mosquitoes." The bulletins on the yellow fever mosquito and the house fly were reissued in 1923 and 1924, respectively. Experiments were conducted during 1923 to determine the possibilities of controlling the breeding of the anopheles mosquitoes, which carry malaria, in extensive swamp areas by means of dry insecticides distributed by aeroplanes. An investigation was also begun on the chemotropism of the anopheles, with a view to finding substances which were attractive

[34] Howard, A fifty year sketch history of medical entomology and its relation to public health, in A half century of public health (1921).
[35] Pierce, W. D., Sanitary entomology (1921).

or repellent to them. A study of the host preference of these mosquitoes has been carried on for some years in coöperation with the School of Hygiene and Public Health of the Johns Hopkins University.

Much of the other work of the Bureau also has an indirect effect on human health, as the endeavors to prevent devastation of food plants or fruits by various types of insects. The bureau receives appropriations to investigate the Hessian fly, grasshopper, alfalfa weevil, chinch bug, wireworm, and to take measures against gypsy and brown-tail moths, European corn borer, Mexican bean beetle, and Japanese beetle, and other insect pests. As previously stated, only a small proportion of its work is directly concerned with insects affecting the health of man.

The bureau has a permanent personnel of about six hundred, of whom, however, more than 350 are in the field. There are also on the average about eight hundred *per diem* employees. The personnel authorized for 1926 under the appropriation for identification and classification of insects, including investigations of insects affecting the health of man and animals, and the importation and exchange of useful insects, consists of nine persons of professional and subprofessional grade and twelve field workers.

The Bureau of Biological Survey. The Bureau of Biological Survey studies the distribution and habits of native wild life, makes biological surveys of areas, and maps the natural life zones of the country; investigates the relation of wild birds and animals to agriculture and stock raising, with a view to the control of the harmful and the conservation of the useful species; conducts campaigns for the extermination of predatory wild animals, destructive rodents, and other injurious forms; experiments in fur farming and studies the diseases to which fur-bearers are subject in captivity; investigates Alaskan reindeer management, and administers big game and bird reservations, and Federal laws relating to migratory game, non-game, and insectivorous birds, importations of foreign wild birds and animals, interstate commerce in wild birds and game, and Alabama land fur-bearing animals.

The work of the Bureau which pertains to public health consists of activities against rats and ground squirrels, the fleas of which are carriers of bubonic plague; activities against the spread

of rabies, a disease of animals, also transmissible to humans; and a number of other less important items. In the report of the Chief for 1924, it is stated that, "The bureau continued to coöperate with the United States Public Health Service of the Treasury Department, and with state, county, and municipal health organizations in lines of work where rodents are important agents in the dissemination of such diseases as bubonic and pneumonic plague, Rocky Mountain spotted fever, and tularæmia." The work in behalf of the conservation of food animals and prevention of destruction of crops also, of course, has an indirect health, as well as economic, aspect.

Prior to 1896 the Biological Survey had been known as the Division of Ornithology and Mammalogy. It became a Bureau in 1905 in accordance with the authority contained in an act of March 3 (33 Stat. L., 877). At that time it received an appropriation of $52,000. Up to 1916 its activities against rodents had been largely in the nature of investigation, though there had been some field work in the national forests. During 1916, however, actual operations against rodents were undertaken in coöperation with the states, and 208,950 acres were treated in that year for the destruction of ground squirrels. By 1920 the total acreage treated for all rodents amounted to approximately twenty million acres, mostly in the West.[36]

In 1916 Congress made an emergency appropriation of $75,000 for operations against rabies. As an example of the extent of such work in 1920, the fact that the Bureau employed from three hundred to four hundred skilled hunters may be of interest.[37]

Activities against house rats have also occupied much of the attention of the Bureau. Publications and information regarding them have been furnished.[38] Demonstrations on their eradication were conducted in nineteen states in 1924, and local control campaigns have been organized, usually in county units. A motion picture, called "The Modern Pied Piper," and a poster (No. Bi-733) have been issued as part of the educational campaign. In its

[36] Bell, W. B., Death to the rodents, Yearbook, 1920.
[37] Bell, Hunting down stock killers. Yearbook, 1920.
[38] Lantz, D. E., The house rat: the most destructive animal in the world. Yearbook, 1917. House rats and mice, Farmers' Bulletin No. 896; How to get rid of rats, Farmers' Bulletin No. 1301.

investigations to improve methods of combating rats, the Bureau has had the coöperation of the Bureaus of Animal Industry, Chemistry, and Plant Industry, and the Hygienic Laboratory of the Public Health Service.[39]

The Bureau of Biological Survey is organized in six divisions: Economic Investigations; Food Habits Research; Biological Investigations; Alaska Investigations; Game and Bird Refugees; Migratory Bird Treaty and Lacey Acts. For 1926 there was authorized a personnel of about eleven hundred, nearly one thousand of whom are field workers. The appropriation for 1925 was nearly a million dollars and for 1926 considerably in excess of that sum.

The Bureau of Public Roads.[40] The principal functions of the Bureau of Public Roads of the Department of Agriculture are to administer the Federal Aid Road Act, under the terms of which the national government coöperates with the states in the improvement of post and national forest roads; and to conduct investigations in various phases of highway construction, and to disseminate knowledge thereon. These duties are, of course, only very remotely connected with the public health. The bureau, however, receives a special appropriation for certain sanitary engineering work.

Agricultural engineering work was begun in the Department of Agriculture as early as 1887, when the Office of Experiment Stations inaugurated investigations in irrigation and drainage. These studies developed considerably in the following years, receiving statutory authority and congressional appropriations from time to time.[41] In fact, rural engineering became a major activity of the Office of Experiment Stations, with a considerable field force and wide coöperative activities with the states. In 1902 the Director of the Office recommended that the scope of the ag-

[39] Annual Report, 1924, p. 15.

The Public Health Service also carries on extensive operations against rats in the far West and elsewhere when plague occurs or threatens. During 1924 this disease was prevalent in California and the Public Health Service conducted much work against rats and ground squirrels in that state.

[40] Holt, The Bureau of Public Roads. Institute for Government Research, Service Monograph No. 26 (1924).

[41] Acts of July 5, 1892 (27 Stat. L., 74); August 18, 1894 (28 Stat. L., 422); March 22, 1898 (30 Stat. L., 335); and April 23, 1904 (33 Stat. L., 294).

ricultural engineering be broadened to include such matters as laying out of farms, water supply, sewage disposal, and use of farm machinery.

In 1915 all of the engineering work of the Department of Agriculture was transferred by the Secretary to the Office of Public Roads. The transfer was further effected by the appropriation act for 1916 (38 Stat. L., 1086, 1111), which also changed the name of the Office of Public Roads to Bureau of Public Roads and Rural Engineering. The name was changed to Bureau of Public Roads in 1919. Beginning in 1916 special appropriations have been made "for investigating farm domestic water supply and drainage disposal, the construction of farm buildings, and other rural engineering problems involving mechanical problems." These annual appropriations for this purpose have been as follows:

1916	$12,805.00
1917	20,000.00
1918	25,000.00
1919	25,000.00
1920	25,000.00
1921	25,000.00
1922	25,000.00
1923	33,000.00
1924	33,000.00
1925	35,300.00

Only a small part of this, perhaps one-fifth, goes into the sanitary engineering work.

For 1925 the total appropriation to the Bureau for all purposes was $474,175.00.

In January, 1922, the Bureau issued a pamphlet (Farmers' Bulletin No. 1227) on "Sewage and sewerage of farm homes," written by George M. Warren, Hydraulic Engineer. Other pamphlets on sanitary engineering subjects, issued by the Department of Agriculture, include: "The sanitary privy" (Farmers' Bulletin 463, superseded by 1227); "Clean water and how to get it on the farm" (Yearbook, 1914); "Water supply, plumbing, and sewage disposal for country homes" (Department Bulletin 57); "Sewage disposal on the farm" (Yearbook, 1916); "Securing a dry cellar" (Yearbook, 1919); "Farm plumbing" (Farmers' Bulletin No. 1426, 1924); "Farmstead water supply" (Farmers' Bulletin No. 1448, 1925); and "Simple plumbing repairs in the home" (Farmers' Bulletin No. 1460, 1925).

These pamphlets are popular, and that on sewage disposal has been distributed to the number of approximately one hundred thousand.

This sanitary engineering work is conducted by two full-time engineers of the Division of Agricultural Engineering. One of these engineers is at the Washington headquarters, while the other is in charge of experiments on sewage irrigation at Vineland, New Jersey. Other activities of the engineers of the Division on irrigation, drainage, refrigeration, and ventilation have an indirect bearing on public health. The Division has a force of about fifty engineers, architects, and other technical personnel.

Bureau of Agricultural Economics. The Bureau of Agricultural Economics was created in 1922 (41 Stat. L., 1315, 1341) by consolidating the Office of Farm Management and Farm Economics with the Bureau of Markets and Crop Estimates. It is concerned with all of the economic questions involved in the production, marketing, and distribution of farm products. It is also interested in farm financial relations, farm labor, agricultural history and geography, land economics, and problems of rural life. Besides the compilation, interpretation, and dissemination of information, it performs regulatory work in connection with enforcement of the Cotton Futures Act, the Grain Standards Act, the Standard Container Act, and it has charge of the administration of the Warehouse Act.

Duties of the Bureau which have an indirect bearing on the public health include a market inspection service on fruits and vegetables at many of the principal producing and receiving centers, and on butter at five of the chief terminal markets. There are also other dairy inspection services and a meat grading service. During the fiscal year 1924, 130,959 cars of fruits and vegetables were inspected at shipping points as compared with 72,466[42] inspected the previous year. At receiving markets, 29,283 inspections were made. A total of 7334 inspections of butter were made, of which 5948 were commercial and 1386 were governmental. An egg standardization program was carried out and nearly five thousand cases of eggs were inspected during the fiscal year 1924. Center Market in the District of Columbia is administered by the

[42] Annual Report 1924, p. 33.

Bureau, and persistent efforts are made to improve and maintain sanitary conditions there.

For several years the Bureau has been gathering data on the retail marketing of meats, including information on sanitary practices. A special report on pushcart methods in New York declares that the sale of fish as carried on by that system is a menace to public health. An economic study on the use of milk in metropolitan Boston was issued in 1925. The Division of Farm Population and Rural Life conducted a survey of rural hospitals in 1925, though from the sociological, rather than the medical angle. Before publication this was sent to the Public Health Service for comment.

The annual appropriation to the Bureau amounts to over four million dollars a year, being $4,504,764 in 1925. Of this sum about $350,000 was for the investigation and certification of the class, quality and condition of cotton, fruits, vegetables, poultry, butter, hay, and other perishable farm products offered for interstate commerce. The personnel engaged on this work is about one hundred, the total personnel of the Bureau amounting to over one thousand six hundred.

The Office of Experiment Stations.[43] The Office of Experiment Stations of the Department of Agriculture exercises the supervision provided by law over the work and the expenditures of the state agricultural experiment stations, serving as a general clearing house for the national system and assisting in various ways to promote its efficiency; it supervises the work and expenditures of the agricultural experiment stations maintained by the Department in Alaska, Hawaii, Porto Rico, Guam, and the Virgin Islands; and compiles and disseminates information regarding the progress of agricultural research through the Experiment Station Record and other publications. Many of these activities now have a direct or an indirect bearing on the public health. Studies on the nutrition of men have been made (at fourteen stations in 1923), studies of dairying and the chemistry and bacteriology of milk have been conducted, and many experiments on production and use of food have been undertaken.

[43] See Conover, The Office of Experiment Stations, Institute for Government Research, Service Monograph No. 32 (1924).

The Office of Experiment Stations was created by the act of March 2, 1887 (24 Stat. L., 440), though there had been experiment stations in the states for some years previously. In 1915 it became a part of the States Relations Service, but was reestablished on its original basis in 1923. The Office of Experiment Stations has a personnel of about eighty, of whom about half are in Washington and the remainder in the field. It deals with about seventy agricultural experiment stations in the states.

Appropriations to this Office increased from $15,000 in 1890 to $95,000 in 1900 and $339,220 in 1910. In 1916 they dropped to $168,610, due to the reorganization in the Department, but have increased ever since. In 1920 the Office received $256,580, and for 1925 it was granted $528,368. Rural engineering, including sanitary work, nutrition, and home economics studies were all carried on under the auspices of the Office until 1915, when these activities were transferred to other branches of the Department.

The Bureau of Plant Industry. The Bureau of Plant Industry conducts researches into all problems of plant life, including such items as soils, seeds, cuttings, plant breeding and acclimatization, cultural methods, marketing and utilization of products, plant diseases, and similar matters. Its principal activities are not in the field of public health, but one or two of its functions have an indirect relationship to this subject.

The Bureau was created in 1901 through the consolidation of existing Divisions of Agrostology, Botany, Gardens and Grounds, Pomology, Seeds, and Vegetable Physiology and Pathology. This action was confirmed by Congress in the agricultural appropriation act for 1902 (31 Stat. L., 922). One of the present project groups of the Bureau is an Office of Drug, Poisonous, and Oil Plant Investigations, which receives an annual appropriation of $40,000 for its work. A notable achievement of this Office was the successful search a few years ago for the seeds of the trees which produce chaulmoogra oil, a remedy used to cure or alleviate leprosy.[44] These trees grew only in the dense jungles of Siam, Burma, Assam, and Bengal, and an agricultural explorer was able in 1922 to secure a quantity for the seeds, so that these important trees could be cultivated in Hawaii.

[44] Rock, J. F., The Chaulmoogra Tree and Some Related Species. Bulletin No. 1057 (1922). U. S. Department of Agriculture.

The Bureau is also attempting to improve strains of medicinal and essential oil plants by breeding, and to promote the production of such plants on a commercial basis in this country. Studies on cancer of plants have been made, the data being of value for comparative purposes in investigations of the disease in man. Promotion of improved cereal cultural methods and the development of other food plants is likewise being undertaken. Other studies include those on fruits, especially from the standpoint of handling and storing; and investigations of poisonous plants.

The total appropriation to the Bureau is nearly $4,000,000 annually, and the personnel is about eighteen hundred.

The Forest Service. The Forest Service of the Department of Agriculture administers the national forests, of which there are over 150 with a total acreage of more than 157,000,000. They are scattered throughout the country, usually in mountainous regions. Since they are visited annually by more than 10,000,000 persons, the sanitary problem is an important one. In fact, all that is asked of the visitor to the national forests, according to publications of the Forest Service, "is that he look to the proper sanitation of his camp and be careful with fire."

The sanitary problem in the national forests is, in fact, similar to that in the national parks, administered by the Department of the Interior, and is essentially one in rural hygiene. An annual appropriation of $25,000 for sanitation and fire protection has been made to the Service for several years. There are some 1500 public camps to which this money has been devoted, the total cost over a period of years having been $403,000, or on the average about $235 a camp.

Local water supplies often have their sources in forest lands and the rangers coöperate in keeping them protected from contamination.

CHAPTER IX

THE DEPARTMENT OF LABOR

Four of the six bureaus of the Department of Labor are concerned with the public health. One of these agencies, the Children's Bureau, is interested primarily in this subject, though also doing other work, but with the other three, the interest in public health is secondary to the general scope of the Bureau. These are the Women's Bureau, the Bureau of Labor Statistics, and the Bureau of Immigration. The Bureau of Immigration is concerned directly with the duty of excluding immigrants who are undesirable on account of physical or mental conditions, though the actual examinations for this purpose are made by officers of the Public Health Service, detailed for this duty.

The Children's Bureau.[1]

History and Development. The Children's Bureau was created to promote the general welfare of children in the United States and the several territories. It was established by an act of Congress approved April 9, 1912 (37 Stat. L., 79), and its duties declared to be to

> investigate and report . . . upon all matters pertaining to the welfare of children and child life among all classes of our people, and . . . especially [to] investigate the questions of infant mortality, the birth rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment [and] legislation affecting children in the several states and territories.

The original suggestion for a Federal Children's Bureau is attributed to Miss Lillian D. Wald, head of the House on Henry Street in New York City. Mrs. Florence Kelley of the National Consumer's League, to whom Miss Wald communicated her idea,

[1] Tobey, The Children's Bureau. Institute for Government Research, Service Monograph No. 21 (1925).

formulated the plan, which was supported by officials of the National Child Labor Committee, and by other well-known sociologists.

Six years elapsed after the first introduction of bills to this end before Congress passed a measure creating the Children's Bureau. Final action was taken on April 5, 1912, and the bill was signed by the President on April 9 (37 Stat. L., 79). The first chief of the Bureau was appointed June 4, 1912, and the legislative bill carrying the first appropriation for the new bureau was approved August 23, 1912.

At that time the Children's Bureau became the twelfth bureau of the Department of Commerce and Labor, where it remained until 1913, when it was transferred to the newly created Department of Labor (Act of March 4, 1913; 37 Stat. L., 736).

The First Work: Infant Mortality Studies. The Bureau began operations on August 23, 1912, when its first appropriation of $25,640 became available. The staff authorized for the first year comprised only fifteen persons, though this number was not reached until March, 1913. The initial work undertaken was experimental, and as infant mortality seemed to present the most strategic point at which the Bureau could begin investigations with its limited forces, a study of the family, social, industrial, and economic factors concerned in infant mortality was conducted in the City of Johnstown, Pennsylvania. At this time the Bureau had no medical staff, and so "The inquiry was necessarily restricted to a consideration of social, industrial and civic factors."[2] Although the general plan of the series of reports on infant mortality which followed was unchanged, later studies, after a child hygiene division was established, discuss in some detail the incidence of medical causes of death. The infant mortality studies have never been the responsibility of any one division. Up to the present time studies have been conducted in Johnstown, Pa.; Montclair, N. J.; Manchester, N. H.; Brockton, Mass.; New Bedford, Mass.; Saginaw, Mich.; Waterbury, Conn.; Akron, Ohio; Pittsburgh, Pa.; Baltimore, Md.; and Gary, Indiana. In Gary a study of the pre-school child, from 2 to 6 years of age, was made, and the infant mortality aspect was somewhat simplified. Recently a statistical

[2] Annual Report, 1914, p. 7.

analysis of causal factors in infant mortality based on the combined figures of eight of these cities has been published.

Other Early Activities. Other activities during the early years of the Bureau's existence included the preparation of a pamphlet on prenatal care; a review of child labor legislation; studies on the employment certificate system; and campaigns to increase birth registration, carried on in coöperation with the United States Bureau of the Census and with the assistance of the General Federation of Women's Clubs. The Bureau also assembled and interpreted figures previously published by the Bureau of the Census relative to children of the United States.

In the fiscal year 1915 the staff was increased from fifteen to seventy-six and an appropriation of $164,640 was obtained. Five divisions were set up in the Bureau, as follows:

1. Statistical.
2. Library.
3. Industrial.
4. Hygiene.
5. Social Service.

Later, the library was incorporated in the Department of Labor Library. In 1916 the Bureau initiated the national observance of Baby Week, in which 2083 communities participated.

On April 1, 1925, the personnel numbered 161, on the average, and the appropriation for the fiscal year 1915 was $375,900, exclusive of the $1,190,000 available for allotment to the states under the Maternity and Infancy Act passed in 1921.

Administration of the First Federal Child Labor Law. A Child Labor Division was organized in the Bureau in May, 1917, in order to administer the act of September 1, 1916 (39 Stat. L., 675), which prohibited interstate commerce in the products of child labor. The act became effective on September 1, 1917, but was held unconstitutional by the United States Supreme Court on June 3, 1918.[3] The Child Labor Division continued in existence, however, in order to make general investigations and to secure enforcement of the child labor cause inserted in government war contracts.[4] The work of the Division was finally discontinued

[3] Hammar *vs.* Dagenhart, 247 U. S. 251.

[4] See Administration of the first federal child labor law, Bureau Publication No. 78, 1921.

when the federal child labor tax went into effect on April 25, 1919 (40 Stat. L., 1138), to be administered by the Bureau of Internal Revenue of the Treasury Department.[5]

Special War Work; Children's Year. At the time the United States entered the World War, in April of 1917, the Bureau had assembled information with reference to the special problems which had developed and the dangers which the children of the warring countries had met. This was promptly made available in reports describing the provisions made for the care of the children and other dependents of enlisted men in various countries, the increase in delinquency, and the ill-advised increase in child labor. During the war, as occasion developed, the bureau studied special problems growing out of the increase in the employment of married women, nursery care for the children of working mothers, and the use of milk in families having young children.

The second year of our participation in the war was designated as "Children's Year," and a Children's Year campaign was formally launched on April 6, 1918, with the approval and support of President Wilson, who allotted $150,000 from the National Security and Defense appropriation for carrying on this work. The President also turned over at the same time $100,000 to the Bureau in order that it might have funds to administer through its Child Labor Division the child labor clause in Government war contracts. The program for Children's Year, which had the cooperation of the Women's Committee of the Council of National Defense, through its Child Welfare Department (later known as the Child Conservation Section of the Field Division), comprised these four main parts:[6]

1. Public protection of maternity and infancy.
2. Mother's care for older children.
3. Enforcement of child labor laws and free schooling for all children of school age.
4. Recreation for children and youth, abundant, decent, protected from any form of exploitation.

[5] This law was declared unconstitutional, in 1922, in Bailey *vs.* Drexel Furniture Company, 259 U. S. 20.

[6] See Children's year (Bureau Publication No. 67, 1920).

In order to carry out this program, committees were organized in the states, to the number of about seventeen thousand, with a total estimated enrolment of some eleven million women. All but two states participated, and the weighing and measuring test of infants and children, with which the Children's Year drive was opened, was conducted in 16,811 cities and towns. The weighing and measuring of apparently well children, for which purpose the bureau distributed over seven and a half million cards, was followed by an effort to secure adequate recreational facilities, and by a "Back-to-School" movement.

As a concluding activity of Children's Year, a conference on child welfare standards was held in Washington during May, 1919, with a number of distinguished child welfare experts from foreign countries in attendance. Following eight Washington meetings, beginning on May 5, regional conferences were held at New York, Cleveland, Boston, Chicago, Denver, Minneapolis, San Francisco, and Seattle. At the Washington conference minimum standards on child welfare were formulated and these were later revised and approved by a special committee.

The results of the Children's Year were followed up in subsequent years by tabulating 200,000 of the weighing and measuring cards; by putting into operation the Child-Welfare Special, a specially equipped travelling unit to promote child hygiene work in rural communities; and by publishing a series of Children's Year Follow-Up pamphlets. A program for communities was also suggested. The Child-Welfare Special consisted of a motor-truck, fully equipped for making physical examinations of children and carried a staff consisting of a physician, a nurse, a clerk, and a chauffeur. It was sent into a state only on request of the state health authorities. After being in operation four years, during which it made surveys in six states, its operation by the bureau staff was discontinued in September, 1923, because a number of the states had signified their willingness to supply the staff and operate the Special without expense to the Children's Bureau.

The Maternity and Infancy Act. In her annual report for 1917, Miss Julia C. Lathrop, then Chief of the Bureau, recommended that there be adopted in this country a plan for federal aid to the states for the public protection of maternity and infancy. Some

four years later, after having had the matter before it in the meantime during the Sixty-Fifth, Sixty-Sixth, and Sixty-Seventh congresses, this last Congress passed such a measure and it was signed by the President on November 23, 1921.

This law (42 Stat. L., 224) authorized an annual Federal appropriation for five years, amounting to $1,240,000 a year, to be allotted to those states which accepted the terms of the act and designated a state agency to administer it. Except for an initial sum of $5000, which is given outright, the federal grant can be obtained only if matched by a state appropriation. The state agency is required to submit for approval detailed plans to a Federal Board of Maternity and Infant Hygiene, composed of the Surgeon General of the Public Health Service, the Chief of the Children's Bureau, and the Commissioner of Education, and make such reports to the Children's Bureau concerning its operations and expenditures for the purposes of the act as shall be prescribed or requested by the bureau. The Children's Bureau was designated as the agency to administer this law, by coöperating with the states, by making necessary studies and investigations, by certifying to the Secretary of the Treasury and to the states the amounts allotted to each state, and by other general administration. A special Maternity and Infant Hygiene Division was created in 1921 to perform the duties required.[7]

Although the Federal Maternity and Infancy Act passed Congress by a large majority and by June 30, 1922, had been accepted by forty-two states, a considerable amount of opposition to it also developed. The Commonwealth of Massachusetts refused to accept the act, and, believing that its rights as a state were infringed, brought suit in the United States Supreme Court against the federal officers charged with the administration of the act, in order to restrain them from carrying out what was alleged to be an unconstitutional law. About the same time a Massachusetts taxpayer brought a similar suit in the courts of the District of Columbia. Both the Supreme Court of the District of Columbia and the Court of Appeals of the District upheld the law, however, and an appeal was taken to the United States Supreme Court. Here both cases were decided together. The decision, given by an

[7] See The promotion of the welfare and hygiene of maternity and infancy (Bureau Publication No. 146, 1925. No. 137, 1924).

unanimous court in 1923, was to the effect that the cases must be dismissed for want of jurisdiction, neither the state nor the taxpayer having a status sufficient to bring court action. The constitutionality of the law was not actually passed upon.

An act approved March 10, 1924, extended the provisions of the Maternity and Infancy Law to the Territory of Hawaii upon the same terms as to the states, and beginning with the fiscal year 1925, for which period an appropriation of $12,079.96 was made.

The administration of the law, which by May, 1925, had been accepted by the legislatures of forty-three states, is discussed later.[8]

Current Activities. In putting into effect its organic act, the bureau has gone on the theory that its proper sphere encompasses all of the problems of childhood, including hygienic, social, industrial, civic, and economic questions. It endeavors to deal with the child as a whole and childhood as a unit. To this end, activities undertaken have been and are concerned with all classes of American children and the factors which directly or indirectly affect their welfare. Not only have children themselves been the subject of investigation and report, but an attempt has been made to achieve effective working relationships with all the agencies, official and voluntary, and with the great groups of people in the country who are concerned with the community problems of child care, and the still larger numbers of individual parents who have been asking for assistance in problems connected with their own children.[9]

Activities, therefore, include not only studies and surveys of maternal and infant mortality and the myriad of cognate matters, but also research into health problems of the pre-school or runabout period, investigations and reports on child labor laws and their administration, juvenile courts, mothers' pensions, illegitimacy, exploitation of children, school attendance, and all matters pertaining to neglected, dependent, delinquent, defective, and underprivileged children.

Actual administrative duties have consisted only of the enforcement of the first Federal Child Labor Law during the nine months of 1917 and 1918 that it was in operation and of the administra-

[8] See page 242.

[9] See Abbott, Grace, Ten years' work for children, *North American Review*, August, 1923.

tion of the Federal Maternity and Infancy Act since it went into effect on November 23, 1921, though the funds authorized were not available until March, 1922.

Except for its activities under these two laws the bureau has had no administrative duties, and, therefore, its attention has been devoted to research along the lines indicated by the portion of the organic act quoted above and to promoting the welfare of children.

Infant and Maternal Mortality; Child Hygiene. The early studies of infant mortality, with which the Bureau began operations, reversed the usual process of investigation. Instead of deriving the information from death records, they began with birth records and followed each child through the first year of life, or such part of the year as had been lived. Between 1915 and 1923 reports on investigations of this nature in eleven cities were published. The rates were found to vary widely in different states and in different parts of the same state, these variations being probably due to many racial, social, economic and educational factors. In order to obtain a group large enough to warrant statistical analysis, the figures for eight of the cities were combined, and the statistical discussion of the 23,000 babies included was issued in May, 1925, under the title, "Causal Factors in Infant Mortality." A high infant mortality rate (that is, the number of deaths under one year of age per thousand live births) was found to be associated with: poor physical condition of the mother; births occurring within a year after the preceding births to the same mothers; artificial feeding; unfavorable economic conditions such as housing congestion and low earnings; and employment of the mother away from home.

In 1925, at the request of the Tennessee Department of Public Health, a study of birth and death records was made in six counties of the state to ascertain to what extent, if at all, the neonatal and maternal mortality rates are affected by the type of attendant at birth.

In 1916 a comprehensive survey was made of statistics relating to maternal mortality from all conditions relating to childbirth, both in the United States and in certain foreign countries. A new report on this subject, based on the most recent statistics available, was prepared in the Statistical Division in 1925 and was

then in press. Although the infant mortality rate in this country has declined in recent years, the maternal mortality has remained among the highest of all nations for which recent statistics are obtainable.

New Zealand has been so successful in handling the infant mortality problem that the bureau has issued two publications discussing the methods used and results achieved in that dominion: "New Zealand Society for the Health of Women and Children: An example of the methods of baby-saving work in small towns and rural districts," and a more comprehensive report in 1922 entitled "Infant mortality and preventive work in New Zealand."

Along with the first studies of infant mortality, popular pamphlets on prenatal care, infant care, and child care were published. The tremendous circulation of these bulletins is shown by the fact that to date about 3,000,000 copies of one of them, that on "Infant care," have been distributed. Other popular bulletins have been issued from time to time, but none has reached the demand of these three, which is not only continuous, but increases annually. The most recent bulletin of this character is "Child management," of which 15,000 copies were distributed within six weeks after its publication in March, 1925.

In order to stimulate the registration of births, the Bureau coöperated with the United States Bureau of the Census, the General Federation of Women's Clubs, the Mother's Congress, the Association of Collegiate Alumnæ, and other organizations in trying to popularize knowledge of the value of birth registration. In coöperation with the Bureau, local committees of women canvassed small districts and filled out the standard birth certificate furnished by the Census Bureau. These certificates were then compared with the local records and the returns made to the Census Bureau in order to determine the accuracy of birth registration.

In some states such tests were made to help the passage of a uniform vital-statistics law. In 1915 committee members made a house-to-house canvass in thirty cities of Florida and arranged with the state health officer to have recorded the unregistered births found by the canvass. These birth-registration tests were continued for several years in twenty-four states, and the importance of birth registration has also been emphasized by the bu-

reau in connection with Children's Year, Baby Week campaigns, and other movements. In 1923, at the request of the state health officer, the Children's Bureau made a test of birth registration in Alabama to assist the state in bringing its registration up to the standard required for admission to the birth-registration area. The discussion and passage of the Maternity and Infancy Act have given fresh impetus to birth registration in many states. Of the seventeen states coöperating under the Maternity and Infancy Act which were not in the birth-registration area in 1924, eleven have instituted special work to secure more complete registration.

"National Baby Week" was first observed in March, 1916, at the joint suggestion of the Children's Bureau and the General Federation of Women's Clubs. The purpose was to stimulate interest in the proper care of infants and by means of exhibits and conferences to bring to the attention of parents the standards of infant welfare which had been developed by experts who had studied the subject. In order to promote the success of this work the bureau prepared a pamphlet entitled Baby Week campaigns, describing the methods used in the earlier urban baby-week observances whose success had encouraged the belief that a nation-wide observance would be practicable. This pamphlet was revised to include the best original ideas and devices developed during the campaign of 1916. A similar movement was carried on in 1917, and the work begun in these campaigns was developed even more extensively in 1918 in connection with Children's Year activities.

In response to public demand the bureau has recently prepared and published a directory of child-health agencies in the United States. A study has been made and a report was issued in 1924 on methods of conducting nutrition work for pre-school children in nine urban and three rural communities in which some definitely organized work in this field is being done. Another important piece of work in progress in 1925 was a study of the status of knowledge in the field of the physical fitness of children. In connection with this study an annotated bibliography of all the available literature on the subject of the growth and development of children was being prepared. Another part of the physical-fitness survey was an investigation conducted during 1924 and 1925, in coöperation with the public schools of Chelsea, Mass., and the Boston Community Health Service, on how posture train-

ing can be used to promote general physical fitness and how posture affects weight, height, vital capacity, power of concentration, and scholastic attainment. A report, based on the results of this investigation, on the organization of posture work for children, was planned for 1925. A study of the prevalence and conditions of development of rickets among young children in the District of Columbia was made by the Children's Bureau in 1922 and 1923; and in 1925 nearly two years had been completed of a three-year demonstration in New Haven, in conjunction with the Department of Pediatrics of the Yale School of Medicine, to show that rickets is a preventable disease and subject to community control. A bulletin was issued in 1924 on the work of habit clinics for children of pre-school age, and a report was in preparation in 1925 on the health supervision of department children.

Welfare problems of the rural child have been the subject of numerous investigations and reports by the Bureau. In making these surveys the agents of the Bureau have used different methods of approach. Sometimes a local study was started with a children's health conference to which parents were encouraged to bring their children. Here they were shown a small exhibit and advised as to the care, feeding, and general condition of the children. No medical service was given and if physical impairments were discovered, the parent was advised to secure competent medical attention for the child. In the Kentucky nutritional survey physical examinations of over half the children were made by a Children's Bureau physician and the environmental factors affecting the health of the child were ascertained by visiting the home and interviewing the mother. Recently a survey of health conditions affecting maternity and infancy in two counties in New Mexico has been conducted.

The act, effective November 23, 1921, known as the Maternity and Infancy Act, authorizes an annual appropriation of $1,240,000 for a five-year period, of which not more than $50,000 may be expended by the Children's Bureau each year for administrative purposes and for "such studies, investigations, and reports as will promote the efficient administration of the act," the balance being divided among the states accepting the act as follows: $5000 unmatched to each state and an additional $5000 to each state if matched; the balance to be allotted among the several states on the basis of population and granted if matched. All the states had

accepted the act in 1925 except Maine, Massachusetts, Connecticut, Illinois, and Kansas. The state activities include: (1) An increase in the number of public-health nurses in state or county positions, or both; (2) the establishment of maternal and infant health centers; (3) stimulation of better birth registration; (4) improvement in milk supplies; (5) surveys of maternity homes and infant homes; (6) studies of the midwife problem; (7) general educational activities through literature, exhibits, lectures, demonstrations, mothers' classes, and correspondence courses. The administrative work of the Children's Bureau in connection with the act, in addition to coöperating with the states through correspondence, includes visits to the states to discuss plans of work and activities; conducting of nurses' institutes on maternal and infant care when requested by authorities; accounting for federal and state funds and checking of state books by the bureau accountant. A survey has been made of maternity homes in Pennsylvania and in Minnesota, and a study is being made of the teaching of obstetrics in the United States. With the coöperation of local physicians, investigations are in progress to determine the causes of stillbirths, neonatal mortality, and maternal mortality. A survey of health conditions affecting maternity and infancy was conducted in two counties in New Mexico in 1925.

In response to the request of state divisions of child hygiene for statements of standards of prenatal care and standards for conducting child-health conferences, for the use of physicians engaged in maternity and infancy work in the states, a conference of physicians was held at the Children's Bureau in May, 1925, to assist in formulating such standards. The standards drawn up at this meeting have been reviewed by the Bureau's advisory committee of pediatrists and submitted to other physicians who were unable to attend the conference.

By the law extending the Maternity and Infancy Act to Hawaii, an appropriation of $12,000 was authorized for the fiscal year 1925. Hawaii has accepted the provisions of the act.

Child Labor and Industrial Conditions Affecting Child Felfare. The first study undertaken by the bureau on the subject of child labor was a review of the legislation affecting child labor in the different states. This review contains a summary of child labor legislation in this country by states, covering such points as the

minimum age, hours of labor, night work, prohibited employments, and the text of the child labor laws. Reports have been published also on the administration of the employment-certificate laws of Connecticut, New York, Maryland, and Wisconsin, and a report has been published on methods of enforcing child labor laws, particularly employment certificate systems. Other studies of child labor laws made by the bureau are a study of the administration of street trades laws and of the administration of state laws requiring children to obtain permits for work in their own homes or in domestic service outside the home.

A study of employment-certificate records in Connecticut has been issued in a report entitled "Industrial Instability of Child Workers; a study of employment certificate records in Connecticut," and a comprehensive report on child labor in Boston, based on employment-certificate records and interviews with working children, was issued in 1922.

Studies made by the bureau in the industrial field, as it relates to children, have included a survey of child welfare in coal mining areas in Pennsylvania and West Virginia, both anthracite and bituminous; investigations of the employment of children in canneries of the Gulf Coast and the State of Washington, industrial home work in Rhode Island, and agricultural activities, particularly in the beet fields of Michigan and Colorado, in the cotton fields of Texas and in the truck gardens of Maryland, Virginia, and New Jersey, on the tobacco farms of Kentucky, South Carolina, Virginia, Massachusetts, and Connecticut, in the fruit and hop growing districts of Washington and Oregon, and in selected areas of rural North Dakota and Illinois. Other studies of employed children relate to street trades and to child labor in Atlanta, made at the request of the Children's Code Commission of Georgia and at Columbus, Omaha, and Wilkes-Barre. As part of an inquiry into conditions under which children are directed into industrial life, a study of organized vocational guidance and juvenile placement activities was conducted in coöperation with the United States Employment Service in a number of cities. An inquiry into occupations for minors in metal manufacturing industries in Michigan, a second into opportunities for minors in the printing industry in New York City, and a third into types of occupations entered by children of subnormal mentality as well as studies of minimum

wage and industrial accidents to minors, have also been made. Somewhat similar are an investigation of the types of occupations entered by children of subnormal mentality in seven cities and a study of the work histories of continuation school children in Milwaukee. Reports on industrial accidents to minors in Wisconsin, Massachusetts, and New Jersey and on the effects on minors of minimum-wage rulings in Minnesota, Wisconsin, California, and the District of Columbia are in press.

The Bureau receives periodical reports giving statistics of children between 14 and 16 years of age obtaining permits to go to work in a number of cities and states (the only source of current information between census years indicating the general trend in the employment of children of legal working age) and from time to time publishes analyses of these statistics.

Measures to stimulate public interest in working children and their needs formed a part of the Children's Year program. A Back-to-School Drive was inaugurated in the fall of 1918 with the object of encouraging children, especially those who had been tempted to leave school for war work, to return to school. This was followed in February, 1919, by a Stay-in-School campaign. In connection with the Back-to-School Drive a number of popular pamphlets dealing with several phases of child labor were issued.

The most recent pamphlet of this character, "Child Labor in the United States: ten questions answered," originally published in 1922 and revised in 1924, was issued in response to a popular demand for information regarding the extent and legal regulation of child labor in the states. Charts showing the state child-labor standards and the state compulsory school attendance standards affecting the employment of minors were issued in 1921, and a pamphlet giving the legal provisions of the various states regulating the employment of minors 16 years of age and over, was published in 1924. A pamphlet giving outlines for the study of child labor was issued in 1924 in coöperation with the Federal Board for Vocational Education. A report on physical standards for working children with a record form for the use of physicians examining children who apply for certificates to work was prepared in 1921 by a committee of physicians appointed by the bureau. The Director of the Industrial Division served as Secretary of the committee, whose report was issued by the Bureau. The appendix giving the

legislative requirements of the states on this topic was later revised to include laws of 1924. All of the publications on legal subjects are revised from time to time to embody changes in state legislation.

A bibliography on child labor was issued in 1916 and a supplementary list of references covering the years of 1916 to 1924 came out late in 1925.

The surveys and reports of the Industrial Division of the Bureau have, in general, been concerned not only with the employment of children, but also with that of mothers of young children and with the industrial status of the father as it affects the welfare of his children.

Dependency, Mothers' Pensions, Delinquency, Juvenile Courts, and Mental Defects. Studies and reports relating to dependency, delinquency, mothers' pensions, juvenile courts, and mental defect have been made under the auspices of the Social Service Division.

A study of mentally defective children in the District of Columbia was undertaken and completed in 1914 at the request of a local citizens' committee. Following this, at the request of a state committee, two studies—one urban and one rural—were made in Delaware in collaboration with the United States Public Health Service. A brief study of the relation between juvenile delinquency and mental defect was made in coöperation with the Georgia Commission on the Feeble-Minded in 1919, and during the same year the Bureau entered into a joint inquiry with the Public Health Service in one of its series of psychiatric studies of delinquent girls.

The mothers' pension laws of the various states and of Denmark and New Zealand were collated and published in 1914; a revised edition including the mothers' pension laws of Canada was issued in 1919, and a bulletin containing the text of such laws passed in the United States from 1920 to 1923 was issued in 1924. A report on the administration of the aid-to-mothers law in Illinois was published by the bureau in 1921. In 1922 a conference on mothers' pensions was held under the auspices of the Mothers' Pension Committee, Family Division of the National Conference of Social Work, and the Children's Bureau, which published the proceedings of the conference. A report on this subject, entitled "Standards of Public Aid to Children in Their Own Homes," is based on in-

vestigations in nine communities chosen as examples of different types of administration and deals primarily with the standards of living of the families receiving aid. This earlier study has been followed by a recent investigation undertaken by the bureau at the request of the Family Division of the National Conference of Social Work and including counties in eight states and the Province of Manitoba, Canada. The inquiry was directed especially towards the analysis of prevailing standards of housing, health, sanitation, and recreation. State laws in effect November 1, 1922, concerned with public aid to children in their own homes were summarized in a chart which was later revised to include 1924 legislation and the texts of the laws of certain states.

Contributory to the dependency problem is that of children born out of wedlock, and the bureau's studies of illegitimacy have had special reference to the burden of dependency resulting from illegitimacy, and the need for enforcing parental responsibility and improving the legal status of these children. Two reports have been issued dealing with legislation, and two studies on illegitimacy as a child-welfare problem, one of them being a field inquiry in Massachusetts. The third in this series, issued in 1924, deals with the treatment of the problem by the social agencies of several different communities. In 1920 two regional conferences were held and proceedings were issued on the subject of standards of legal protection for children born out of wedlock; this material formed the basis for the work of a committee of the National Conference of Commissioners on Uniform State Laws, appointed to consider a model law on status and support. This law was approved by the Commissioners in 1922 and has been adopted, with slight modifications, in four states. In 1925 the bureau published a study showing that the infant mortality among illegitimate babies in Baltimore had increased 50 per cent between 1915 and 1921, apparently as the result of the increase in breast feeding made possible by the Maryland law of 1916 forbidding separation from their mothers, except under specified conditions, of babies under six months old.

In the general field of dependency, a report has been issued relating to children deprived of parental care. Considerable legal and other research material has been prepared for limited distribution in temporary form, especially in connection with the bureau's coöperation in the work of state commissions for the study and

revision of child-welfare laws, on which a bulletin was issued early in 1924. A study of county boards of child welfare or public welfare in Minnesota, North Carolina, California, New Jersey, and New York was published in 1922. During 1923 a field study was made of the organization and methods of work of child-caring agencies in ten localities chosen as presenting examples of some of the best work in child placing in different parts of the country. The bureau had in preparation in 1925 a handbook of instructions, standards, and information for boards of directors, superintendents, and workers in institutions for dependent children.

A collection of papers on the subject of foster-home care for dependent children, contributed by eleven of the leading authorities in that field, was also issued in 1924. A study of dependent children in the District of Columbia, which covers the work of the Board of Children's Guardians and, in less detail, that of private institutions, came out in the same year, and a report has been written of a field study of children indentured by the Wisconsin State Public School for dependent children. In coöperation with The Children's Code Commission and The Department of Public Welfare of Georgia an investigation was made in 1924 of dependency, delinquency, and child protection in that state. Adoption laws have likewise been summarized.

The methods of juvenile courts and the problems of juvenile delinquency have been studied extensively and many publications on these subjects have been issued. A field study has been made and a report was issued in 1925 on the procedure, organization, and methods of work of ten courts in different parts of the country. In 1921, in coöperation with the National Probation Association, a conference was held on Juvenile-Court Standards. The final report of a committee on standards appointed at that time was approved by the third conference, in 1923, and has been published under the title "Juvenile-Court Standards." An investigation of domestic-relations courts was in progress in 1925, to include: (1) An analysis of the laws of the forty-eight states with reference to jurisdiction, procedure, and provision for probation service; (2) a statistical study of about 12,000 families in Cincinnati and Philadelphia, showing the extent to which the same family is dealt with in different types of cases and the inter-relationships of courts and social agencies in such cases; and (3) studies of the

organization and case-work methods of courts in those cities which have attempted special court organization for dealing with family problems.

The Child Welfare Commission movement has come in for special attention from the Social Service Division and much material has been supplied for use in the work of the various state commissions for the study and revision of child welfare laws. In 1924 a pamphlet on this subject (Publication No. 131) was issued. At that time there were twenty-nine such commissions in existence and the Children's Bureau was in active coöperation with those in Georgia, as previously stated; in Kentucky, where assistance was given in preparing legislative recommendations; and in Pennsylvania, where the Bureau was making a study of dependency and delinquency in selected counties, the findings of which the commission planned to use in preparing recommendations to the 1925 session of the legislature.

Miscellaneous Studies and Investigations. The bureau has undertaken various other studies and investigations on the subject of the general welfare of children, one of the early ones being concerned with recreation facilities for children in the District of Columbia, made at the request of the President of the Board of District Commissioners. A campaign for wider recreational opportunities was a feature of the Children's Year program.

During the fiscal year 1923, a specialist in recreation was added to the bureau staff, in order that in the future this part of the bureau's work may be greatly extended. "A brief manual of games for organized play adapted from standard sources" was prepared in connection with the Porto Rican survey, and a handbook of games for blind children was in preparation in 1925. A study of public amusements for children was under way in 1925.

The first of a projected series of studies of the welfare of children in the insular possessions of the United States has recently been made in Porto Rico, where it took the form of a Children's Year Survey in 1922, with follow-up work in 1923. In addition to investigating conditions on the island the representatives sent by the bureau to Porto Rico assisted in developing activities to improve the health and well-being of children. An insular division of child health was established, health teaching was introduced in the schools, child-welfare activities were stimulated through "baby

weeks," and games and athletics for school children were developed. A report on the Porto Rico Survey was issued in 1923.

For several years the bureau has been obtaining from state officials, current information on legislation relating to child welfare which was pending before the various state legislatures. This information, data on bills before Congress pertaining to child welfare, reviews of current books, and items from English and foreign language periodicals dealing with child welfare have been given in the weekly News Summary, issued in mimeographed form by the bureau and distributed to organizations interested in these subjects. Action taken on state child welfare legislation has been summarized in the annual reports of the chief of the bureau for the fiscal years 1923 and 1924.

Publications. More than 150 different bulletins and pamphlets have been prepared and issued by the Children's Bureau. They include both technical and popular publications, and cover such general subjects as child welfare, infant and maternal mortality, hygiene of maternity and infancy, child hygiene, industrial problems of child welfare; dependent, defective, and delinquent children, and recreation.

Organization. The work of the Children's Bureau is carried on through the following administrative units:

Office of the Chief
Office of the Assistant to the Chief
Social Service Division
Child Hygiene Division
Industrial Division
Editorial Division
Statistical Division
Maternity and Infant Hygine Division

Each division is supervised by a director and an associate director.

Office of the Chief. The Chief of the Bureau, with the help of the assistant to the chief and the directors of the division, plans the work and decides the policies to be followed.

Office of the Assistant to the Chief. Under the Assistant to the Chief come the general administration of the Bureau, the correspondence section, the filing section, and general assistance to the Chief in planning and executing the work of the Bureau.

Special surveys or investigations of a general character which do not come under any single division are under the direct supervision of the Chief or the Assistant to the Chief.

Social Service Division. The Social Service Division was organized in November, 1914. The work relates to children in need of special care—the dependent, the delinquent, and the mentally or physically handicapped. The activities of the division include research and investigation of problems relating to dependent, defective, and delinquent children; methods in use by institutions and agencies; the problems and methods of work of courts dealing with children; legislation needed for the protection of children; the work of state and other governmental agencies for children in need of special care. There are maintained a current index of references to articles and reports within the scope of the division's work, an index of agencies and institutions and compilations and digests of legislation. The personnel varies with the work undertaken.

Child Hygiene Division. The Child Hygiene Division was established in October, 1914. It consists of a Director who is a physician, an Associate Director and a research assistant (also physicians), a field staff of doctors and public health nurses, and a clerical force.

The Child Hygiene Division serves in an advisory capacity to the other divisions on all matters pertaining to hygiene. It has coöperated with the other divisions of the bureau in studying the social, economic, and hygienic factors in infant mortality. It makes investigations into the prevalence and methods of control of physical conditions affecting children's health and efficiency; for example, rickets and bad posture. Through research it assembles material relating to the physical and mental health and the physical development of children. The division prepares popular bulletins and leaflets on child hygiene, physical and mental, and conducts the correspondence with the very large number of mothers seeking advice regarding the general hygienic care of themselves and of their children, and with others interested in the health and care of children.

Industrial Division. The function of the Industrial Division, organized in July, 1914, is to collect and disseminate information regarding the various ways in which industry affects the welfare

of children and child life and to coöperate with other divisions in matters involving industrial or economic problems.

Studies relating to the employment of children necessarily constitute the greater part of the work of the Division. These fall into three main fields, namely:

1. The extent, conditions, causes, and effects of child labor.
2. Methods of regulating child labor, including laws affecting child labor and their administration.
3. The transition of the child from school to work, including his preparation for industrial life, the requirements for his admission to the various trades, and supervising his entrance into industry.

In addition, the division inquires into the relation of industry to child welfare in its broader aspects, as in the studies regarding children in mining and agricultural communities in which the relation of the economic and occupational status of the parents to the development of the child is perhaps the most significant aspect.

As in the other divisions of the bureau, the work of investigation is carried on by means of field studies and library research, and the data collected are given out informally through correspondence and conferences, as well as through technical and popular reports.

The work is performed by a Director and Associate Director and a permanent staff of specialists, research and field agents and clerks, assisted by temporary field workers according to the extent of the field investigation under way.

Maternity and Infant Hygiene Division. With the passage of the federal act for the promotion of the welfare and hygiene of maternity and infancy in November, 1921, the bureau added to its other six major divisions a new Division of Maternity and Infant Hygiene. It is in charge of a Medical Director, assisted by an Associate Medical Director, and there is also a public health nurse, an accountant, and such clerical and field force as necessary. The division acts as a clearing house for plans with regard to organization, activities, publications, exhibits, and other details of the state program; renders assistance and advice to the states through visits by the Director, Associate Director, and the consulting nurse, by conducting institutes for public health nurses,

and by issuing news letters and other bulletins; conducts research on appropriate topics; supervises financial accounting of the Federal funds allotted to the states; and receives reports of state activities. An annual report is issued on the administration of the Maternity and Infancy Act.

Statistical Division. The functions of the Statistical Division, established in August, 1914, include assistance in the planning of schedules and instructions, examining and editing schedules; coding, card-punching, and tabulation; the writing of reports; statistical criticism and statistical editing of all reports issued by the bureau; and the conduct of special statistical investigations.

The Director has general charge of the division, and is responsible for the statistical criticism of all reports. A considerable amount of his time is devoted to writing reports.

Most of the administrative work of the division falls upon the Associate Director, in particular the organization and planning of the work. Part of the Associate Director's time is also devoted to the writing of reports. A statistical expert assists in planning symbol sheets and in drawing up tables.

The work of the division is organized according to the requirements of the study under way at any particular time, into separate sections, each section dealing with a single piece of work. Thus the sections vary from time to time in accordance with the number of separate pieces of work on hand, and as additional temporary clerks are employed, or clerks are detailed from other divisions. Each section is under a section head, who is directly responsible for the progress of the work of the section.

Editorial Division. The work of the Editorial Division includes: (1) Editing, revising, and proof-reading of the Bureau's publications; (2) issuance of a weekly child-welfare News Summary (mimeographed); and (3) press releases, special articles, and exhibits.

The News Summary contains abstracts of important articles on child welfare, book reviews, notices of meetings, and notes on national and state child-welfare legislation. The leading periodicals in English and foreign languages are digested for this purpose.

As a part of the bureau's effort to inform parents of the child-welfare standards worked out by specialists there has been as-

sembled a collection of exhibit material which is loaned to organizations desiring to make use of it. It includes three models—a playground, an institution on the cottage plan, and a child-health center; two motion-picture films; slides on infant and child care; and posters, panels, and charts. A film demonstrating posture exercises was completed and released early in 1926.

The Director of the division is assisted by an associate director in charge of reports and a specialist in public information in charge of the News Summary, the distribution of information, and exhibits; and there are also editors, a checker, an indexer, research workers, exhibits assistants, a secretary, and clerical workers.

Personnel. On April 1, 1925, the total personnel numbered 136, of whom somewhat less than half were of professional grade. There were also a score or more of temporary employees on various duties, chiefly in the field.

Appropriations. The Bureau began in 1913 with an appropriation of about $25,000, but now receives somewhat over a million and a half dollars, though of this sum a million or more is under the Maternity and Infancy Act and is allotted to the states which have accepted that law.

Annual appropriations have been as follows:

1913	$25,640
1914	25,640
1915	164,640
1916	164,640
1917	214,640
1918	380,542
1919	658,499
1920	310,308
1921	291,273
1922	769,135
1923	1,526,272
1924	1,528,652
1925	1,332,993

The Women's Bureau.[10] The Women's Bureau formulates standards and policies to promote the welfare of wage-earning women, to improve their working conditions, and advance their opportunities for profitable employment. To this end the Bureau conducts investigations and publishes the results of its research.

[10] Weber, The Women's Bureau. Institute for Government Research, Service Monograph No. 22 (1923).

As the welfare of women obviously includes their health and physical condition, the bureau is interested in this phase of the problem.

History and Development. The Women's Bureau was originally established as the "Women in Industry Service" in the Department of Labor on July 16, 1918 (40 Stat. L., 634), as a war emergency measure. Its scope was stated by the Secretary of Labor to be to "develop in the industries of the country, policies and methods which will result in the most effective use of women's services in production for the war, while at the same time preventing their employment under injurious conditions." Thus the primary functions of this bureau were recruiting women workers and safeguarding their health and efficiency while at work.

The first work of the Women in Industry Service consisted of a survey of occupations hazardous to health. A study was made of the proposed employment of women during the war in the chemical industries at Niagara Falls, N. Y. Coöperating with the Women in Industry Service in this study was a committee, the membership of which represented the Surgeon General's Office (Army), the Ordnance Department, Chemical Warfare Service, Navy, Public Health Service, National Research Council, Bureau of Standards, Bureau of Labor Statistics, Working Conditions Service, and the New York Industrial Commission. Recommendations for dust removal, sanitation, and safety, and other precautions against occupational hazards were worked out by physicians, engineers, and women investigators, acting for the committee.

Another early activity was a study of the problem of night work for women. A series of conferences to consider this proposition was called in Washington during August, 1919. Representatives of the Women's Committee, the Committee on Women in Industry, the National Consumers' League, the National Women's Trade Union League, the American Association for Labor Legislation, American Federation of Labor, and state industrial commissions and departments of labor were present. Plans for the control of night work and the consequent protection of public health were formulated, but were not put into effect, due to the armistice.

Other subjects which received attention during the war included coöperation in the enforcement of state labor laws, and equal wages for men and women doing the same work.

After the armistice was signed (November 11, 1918) the Women in Industry Service was continued for the fiscal year 1920. On December 12, 1918, there were issued standards for the employment of women in industry. Included in them were provisions regarding hours of labor, wages, working conditions, home work, employment management, coöperation of workers in establishing standards, and coöperation with official agencies.

Other post-war operations during the first year included studies on labor legislation, wages after the war, negro women in industry, displacement of women workers, and home work.

The Women's Bureau was made a permanent peace time organization under the act of June 5, 1920 (41 Stat. L., 987). Its purpose was stated to be the same as the former Women in Industry Service.

Current Activities. The functions of the bureau have been threefold: (1) To secure information which was not already available, but which was needed to throw light on special women in industry problems urgently in need of consideration; (2) to search out and arrange such other material as was already available but which was not in such form as to make its significance readily appreciated or to permit of its full use; and (3) with the results of the information thus gained, to coöperate with other agencies in the recommendation and establishment of certain standards which had been shown to be necessary for the protection and advancement of women in industry.

In September, 1919, the bureau studied the opportunities for women in the federal service. Other studies were made on women's part in American industries during the World War and industrial training for women and girls. The effect of laws regulating the hours of work on the employment of women and the responsibility of wage-earning women for the support of others were investigated, as were also general industrial conditions.

An increased appropriation was given the Women's Bureau for the fiscal year 1921. It received $75,000 for this period, so that its field of work could be somewhat broadened. The previous appropriations had been $40,000 for each year.

During its third year, investigations of hours, wages, and working conditions for women in industry in the various states were among the most important activities. This work has been done at the request of the states and in coöperation with them. Special studies were made in Kansas, Iowa, Rhode Island, Georgia, and Maryland; also one on wages of shoe workers in Manchester, New Hampshire, and one on family responsibilities of women as compared with those of men. A pamphlet entitled "A physiological basis for the shorter working day for women" by Dr. G. W. Webster was issued.[11] Another publication of the bureau in this year was one entitled "Health problems of women in industry."[12]

An outstanding activity in 1923 was the calling of a Women's Industrial Conference in January. Among the numerous papers read before the 326 women who attended as delegates was one by Dr. R. A. Spaeth on "Health standards for women in industry." At a similar conference held in January, 1926, one afternoon was devoted to a discussion of health problems.

Another notable event in 1923 was a decision[13] of the United States Supreme Court holding unconstitutional the minimum wage law for the District of Columbia.[14] The Bureau has studied and advocated such laws in the states, and has prepared a comprehensive bibliography on the subject.

In 1923 a study of industrial accidents among women was begun in coöperation with the Department of Labor of New Jersey, and was later extended to Ohio and Wisconsin. This was completed in 1924. There was also undertaken an investigation of absenteeism among women in textile mills in eighteen states, in which it was found that 23 per cent of all the 2215 women interviewed were absent because of personal illness.

Other recent studies have included the collection of data on standard and scheduled hours of work, conditions in the canning and preserving industry in the State of Washington (in coöperation with the Children's Bureau), and on state laws affecting working women.

[11] Bulletin 14.
[12] Bulletin 18.
[13] Adkins *vs.* Children's Hospital, 261 U. S. 525.
[14] 40 Stat. L., 960.

The Bureau has contributed a permanent exhibit on industrial hygiene to the Hall of Health at the Smithsonian Institution. A motion picture film "When Women Work" is also in circulation, having been prepared under the auspices of the Bureau. A new two reel film containing material on industrial women, including their health, was under way in 1925. A number of posters and charts have also been issued.

Organization and Personnel. During 1925 there were forty-six employees in the Bureau, of whom nineteen were of professional grade. There was no medical personnel. The bureau contains four divisions, each directly under the supervision of the Director. The present director is Miss Mary Anderson, who was appointed August 16, 1919, succeeding Miss Mary Van Kleeck, who had been Director since the Women in Industry Service was established. The Director has general supervision of the work of the bureau. She is aided by an assistant director.

The Division of Investigations, under the assistant director, investigates actual conditions in the field which affect women in industry.

The Division of Statistics prepares the statistical tables on which the reports of the bureau are based.

The Division of Reports and Exhibits prepares and edits the reports of the bureau. To date about fifty bulletins have been issued.

The Division of Research searches out material relating to various investigations and studies undertaken by the bureau and does the research work necessary to answer requests made by individuals and organizations. It prepares and keeps up to date, maps and charts showing state legislation for women workers. It classifies and indexes reference material in the office. It also prepares a monthly news letter that reports the activities in the various states and foreign countries that concern women workers.

Appropriations. In recent years the annual appropriation to the bureau has been about $100,000. Appropriations have been as follows:

1919	$40,000
1920	41,200
1921	75,600
1922	75,000
1923	100,000
1924	105,000
1925	107,380

The Bureau of Labor Statistics.[15] The Bureau of Labor Statistics is charged with the duty of acquiring and diffusing among the people of the United States useful information on subjects connected with labor in the most general and comprehensive sense of that word, and especially upon its relations to capital, the hours of labor, the earnings of laboring men and women, and the means of promoting their material, social, intellectual, and moral prosperity. From the beginning of its existence, this range of function has evidentally been interpreted to include studies on industrial hygiene, as bulletins, chapters in bureau reports, and special articles in the Monthly Labor Review have frequently been devoted to this subject. Workmen's insurance, occupational diseases, accidents, vocational education, and other topics related to the public health have also been investigated by the bureau from time to time.

History and Development. The Bureau of Labor Statistics is an outgrowth of the original labor organization in the National Government. It was first created by Congress by an act of June 27, 1884 (23 Stat. L., 60), as a Bureau of Labor in the Department of the Interior. Four years later, by an act of June 13, 1888 (25 Stat. L., 182), it was made an independent establishment, as the Department of Labor. When, in 1903, the Department of Commerce and Labor was created (32 Stat. L., 825), this "Department" became the Bureau of Labor in the new department. Finally in 1913 it became the Bureau of Labor Statistics in the new Department of Labor (37 Stat. L., 736). Throughout these changes the work was carried on without variation.

Except for a brief period from May 30, 1908, to September 7, 1916, when the bureau enforced certain aspects of a law (35 Stat. L., 556), granting government employees the right to receive compensation for injuries sustained in the course of employment, all of its functions have been educational. One of its earliest investigations was concerned with working women in large cities,[16] while another early one dealt with marriage and divorce.[17] Special

[15] Weber, The Bureau of Labor Statistics. Prepared as a Service Monograph for the Institute for Government Research and published (1922) as Bulletin No. 319 by the Bureau of Labor Statistics.

[16] Annual Report, 1888.

[17] First Special Report, 1889.

reports were issued in 1895 and 1904 on housing, and in the latter year, a bulletin on public baths was published. On January 29, 1907, Congress directed the bureau (34 Stat. L., 866) to investigate industrial, social, moral, educational, and physical conditions of women and child wage earners in the United States. The results of this study were subsequently (1910-1912) issued in nineteen volumes.[18] Volume XIII of this series pertained to infant mortality and mothers' employment; Volume XIV, to causes of death among female cotton-mill operatives; and Volume XVII, to hookworm disease among cotton-mill workers.

Up to July 1, 1912, one hundred bi-monthly bulletins had been issued on various labor topics. The system thereafter was changed, these regular bi-monthly bulletins and the annual and special reports being supplanted by a number of series of bulletins, which were published as occasion demanded. The designations of these series were: Wholesale prices; Retail prices and cost of living; Wages and hours of labor; Women in industry;[19] Workmen's compensation and insurance; Industrial accidents and hygiene; Conciliation and arbitration; Labor laws of the United States (including court decisions); Foreign labor laws; and Miscellaneous series.

Studies in industrial hygiene have been undertaken and reported upon frequently since 1912. Among subjects dealt with have been lead poisoning, anthrax, hygiene of the printing trades, industrial efficiency in munition works, mortality from dusty trades, carbon monoxide, and various other aspects of occupational hazards.

The complete list of the bulletins on industrial accidents and hygiene is as follows (items starred being out of print):

No. 75. Industrial hygiene, by George M. Kober, M. D. (1908).
No. 79. The mortality from consumption in dusty trades, by Frederick L. Hoffman (1908).
No. 82. Mortality from consumption in occupations exposing to municipal and general organic dust, by Frederick L. Hoffman (1909).

[18] 61 Cong. 2 sess., S. doc. 645.
[19] This series was discontinued in 1918 when the Women in Industry Service, now the Women's Bureau, was organized.

No. 86. Phosphorus poisoning in the match industry in the United States, by John B. Andrews; List of industrial poisons, by Dr. Th. Sommerfield in collaboration with Sir Thomas Oliver and Dr. Felix Putzeys (1910).

No. 95. Industrial lead poisoning, with descriptions of lead processes in certain industries in Great Britain and the western states of Europe, by Sir Thomas Oliver; The white-lead industry in the United States, with an appendix on the lead-oxide industry, by Alice Hamilton, M. D.; Deaths from industrial lead poisoning (actually reported) in New York State in 1909 and 1910, by John B. Andrews; Laws enacted during 1911 requiring the report of occupational diseases (1911).

No. 100. List of industrial poisons and other substances injurious to health found in industrial processes; Act providing for a tax on white phosphorus matches and for prohibiting their import or export (1912).

*No. 104. Lead poisoning in potteries, tile works, and porcelain enameled sanitary ware factories, by Alice Hamilton, M. D. (1912).

No. 120. Hygiene of the painters' trade, by Alice Hamilton, M. A., M. D. (1913).

*No. 127. Dangers to workers from dusts and fumes and methods of protection, by William C. Hanson, M. D. (1913).

*No. 141. Lead poisoning in the smelting and refining of lead, by Alice Hamilton, M. D. (1914).

*No. 157. Industrial accident statistics, by Frederick L. Hoffman (1915).

No. 165. Lead poisoning in the manufacture of storage batteries by Alice Hamilton, M. D. (1914).

*No. 179. Industrial poisons used in the rubber industry, by Alice Hamilton, M. D. (1915).

No. 188. Report of British departmental committee on the danger in the use of lead in the painting of buildings (1916).

*No. 201. Report of the Committee on Statistics and Compensation Insurance Costs of the International Association of Industrial Accident Boards and Commissions (1916).

No. 205. Anthrax as an occupational disease, by John B. Andrews (1917).

No. 207. Causes of death, by occupation, by Louis I. Dublin (1917).

No. 209. Hygiene of the printing trades, by Alice Hamilton, M. A., M. D., and Charles H. Verrill (1917).

*No. 216. Accidents and accident prevention in machine building, by Lucian W. Chaney and Hugh S. Hanna (1917).

No. 219. Industrial poisons used or produced in the manufacture of explosives, by Alice Hamilton, M. D. (1917).

No. 221. Hours, fatigue, and health in British munition factories (1917).

No. 230. Industrial efficiency and fatigue in British munition factories (1917).

No. 231. Mortality from respiratory diseases in dusty trades (inorganic dusts), by Frederick L. Hoffman (1918).

*No. 234. The safety movement in the iron and steel industry, 1907 to 1917, by Lucian W. Chaney and Hugh S. Hanna (1918).

No. 236. Effects of the air hammer on the hands of stonecutters (1918).

No. 251. Preventable death in the cotton manufacturing industry, by Arthur Reed Perry, M. D. (1919).

*No. 253. Women in the lead industries, by Alice Hamilton, M. A., M. D. (1919).

No. 256. Accidents and accident prevention in machine building, by Lucian W. Chaney. Revision of Bulletin 216 (1919).

No. 267. Anthrax as an occupational disease, by John B. Andrews; Revised edition (1920).

No. 276. Standardization of industrial accident statistics. Reports of the committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions, 1915-1919 (1920).

No. 280. Industrial poisoning in making coal-tar dyes and dye intermediates, by Alice Hamilton, M. D. (1921).

No. 291. Carbon monoxide poisoning, by Alice Hamilton, M. D. (1921).

No. 293. The problem of dust phthisis in the granite stone industry, by Frederick L. Hoffman (1922).

No. 298. Causes and prevention of accidents in the iron and steel industry, 1910 to 1919.

No. 306. Occupational hazards and diagnostic signs, by Louis I. Dublin and Philip Leiboff (1922).

No. 339. Statistics of industrial accidents in the United States, by Lucian W. Chaney (1923).

No. 392. Survey of hygienic conditions in the printing trades, by S. Kjaer (1925).

No. ——. Phosphorus necrosis in the manufacture of fireworks and the preparation of phosphorus, by Emma F. Ward. (In press.)

A completed study, not yet ready for print, on the effects of radio-active substances on the health of workers.

Articles on industrial hygiene are also given in the Monthly Labor Review, published by the bureau.

Statistics on industrial accidents have been collected and analyzed by the Bureau since 1910.[20] Efforts have been made to standardize accident statistics and occupational disease data throughout the country, so that comparable information, by industries and occupations, by states and localities, and by causes and results, may be available. The Bureau is represented on the statistics and compensation insurance cost committee of the International Association of Industrial Accident Boards and Commissions, and has also been closely identified with the efforts of the American Engineering Standards Committee to develop standard safety codes for this country. The Bureau of Standards has likewise been prominent in this work and the Public Health Service has prepared an industrial hygiene code for the committee.

Organization and Personnel. For the fiscal year 1926, the personnel estimated for the Bureau totaled 112, of whom twenty-two were in the professional and scientific class. Studies of industrial hygiene have in the past been made sometimes by the bureau personnel, and sometimes by experts specially employed. Among persons in the latter category, who have made special studies, have been Dr. Alice Hamilton, F. L. Hoffman, Louis I. Dublin, and John B. Andrews. The permanent staff is shifted as the demands of work require, though the Bureau is divided into the Office of the Commissioner, the Office of the Chief Statistician, a Statistical Division, an Editorial and Research Division, and a Law Division. A library was maintained until 1916, when the libraries of the different bureaus of the Department were combined in a departmental library.

The appropriation to the bureau for the fiscal year 1926 is $285,300. Since 1907 the annual appropriations have been between $170,000 and $300,000. Just what proportion of these sums has been used for industrial hygiene studies is difficult to say.

[20] See Methods of Procuring and Computing Statistical Information. Bureau of Labor Statistics, Bulletin No. 326 (1923).

The Bureau of Immigration.[21] The Bureau of Immigration is concerned with the enforcement of all federal laws relating to the admission, exclusion, and deportation of aliens. This means that the bureau must (1) determine the eligibility for entry of the alien, (2) prevent the entry of those who are ineligible, (3) deport those who have gained entrance and remain in violation of law, and (4) admit those who are entitled to admission. Physical and mental examinations of applicants, in order to prevent the entry of diseased persons, that is, the socially and mentally unfit, form one of the most important functions of the bureau. These examinations are actually made by medical officers of the Public Health Service, assigned for the purpose by the Surgeon General, and the regulations governing these medical inspections are made by the Public Health Service, though carried out under the general supervision of the Bureau of Immigration.

History and Development. During the century following the adoption of the Constitution in 1789 the control of immigration by the federal government was unorganized and received slight and only intermittent attention. Although the encouragement, rather than repression, of immigration was considered desirable in the early days of the nation, it became apparent in the late thirties that some form of regulation to exclude the unfit was needed. In 1838, about the time when steam was making transatlantic travel more simple, a bill was introduced in Congress to penalize masters of vessels who transported idiots, lunatics, persons afflicted with incurable diseases, and criminals, but the bill was not even considered.[22]

Reporting of immigrants to Congress by the Secretary of State had been authorized as early as 1819 (3 Stat. L., 488) and continued until 1870. Provisions for sanitary facilities for passengers on merchant vessels had been contained in legislation in 1847 (9 Stat. L., 149) and 1848 (9 Stat. L., 223). In 1864 an act (13 Stat. L., 385) was passed creating a Commissioner of Immigration, but this law was repealed in 1868 (15 Stat. L., 56). Not

[21] See Smith and Herring, The Bureau of Immigration. Institute for Government Research, Service Monograph No. 30 (1924).

[22] Treadway, W. L., Our immigration policy and the nation's mental health, *Scientific Monthly*, October, 1925.

until 1882 was the first comprehensive immigration law enacted (22 Stat. L., 214). Up to this time, most of the aliens had come from the British Isles and from Germany, though subsequently there has been a great influx of immigrants from Southern and Eastern Europe.

The law of 1882 provided for the exclusion of convicts, lunatics, idiots, and persons likely to become public charges. Other laws followed in quick succession, the most notable being the act of March 3, 1891 (26 Stat. L., 1084). This law created the office of Superintendent of Immigration in the Treasury Department, where it remained until 1903, when it was transferred to the new Department of Commerce and Labor. When this Department was split in 1913, the Bureau went to the Department of Labor. The law of 1891, which, among other things, provided for medical examinations of immigrants by officers of the Public Health Service, was elaborated by later acts. In 1893 a law (27 Stat. L., 449) permitted the President to suspend immigration with countries where dangerous contagious diseases existed.

The most comprehensive statute came in 1917 (39 Stat. L., 874), following an intensive study of immigration made by a special commission. This law excluded the insane, idiots, imbeciles, feebleminded, chronic alcoholics, mentally defective persons, persons with loathsome or dangerous contagious diseases, and persons over sixteen unable to read. Except for minor amendments and a new act in 1924 (43 Stat. L., 153) which fixes quotas from the various countries, and increases penalties for bringing in excludable aliens, this 1917 law is still in effect.

Current Activities. The Public Health Service, as previously stated, is primarily responsible for the physical and mental examination of immigrants. During the fiscal year 1924, there were examined by medical officers of the Service,[23] 938,928 alien passengers, as compared with 745,515 for the fiscal year 1923, 586,228 for the fiscal year 1922, and 1,137,682 for the fiscal year 1921. In addition to passengers, 874,962 alien seamen were examined in 1924. These examinations were conducted at nearly one hundred ports and places in the United States and its dependencies and in Canada. At some of the stations, immigration and quaran-

[23] Surgeon General, Annual Report, 1924, p. 166.

tine inspections are conducted jointly by the officers of the Public Health Service. About half of the arriving immigrants came through the port of New York.

The grounds for excluding or deporting aliens for physical or mental reasons are thus set forth in the law (39 Stat. L., 874):

> . . . All idiots, imbeciles, feeble-minded persons, epileptics, insane persons; persons who have had one or more attacks of insanity at any time previously; persons of constitutional psychopathic inferiority; persons with chronic alcoholism; . . . persons afflicted with tuberculosis in any form or with a loathsome or dangerous contagious disease; persons not comprehended within any of the foregoing excluded classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such physical defect being of a nature which may affect the ability of such alien to earn a living.

Discovery of a disease dangerous to the public health is sufficient to warrant exclusion or deportation without recourse, but in the case of certification of mental defect, the alien may appeal to a board of medical officers of the Public Health Service, and he may introduce before this board at his own expense one expert witness. He is also entitled to reexamination by order of the immigration authorities.

Hospitalization for aliens when required is accomplished only on an order by an immigration officer, though it may result from the report of a medical officer. According to law, hospitalization may be given where "the dictates of humanity require that . . . [the alien] be given immediate hospital treatment." The law also requires the refusal of entry to a hospital of an alien "certified to be suffering from tuberculosis in any form or from a loathsome or dangerous contagious disease other than one of quarantinable nature . . . unless the Secretary of Labor is satisfied that to refuse treatment would be inhumane or cause unusual hardship or suffering, in which case the alien shall be treated in the hospital under the supervision of the immigration officials at the expense of the vessel transporting him." Alien seamen may also be admitted to hospitals in accordance with similar procedure. The hospitals are generally conducted under the supervision of the medical officers of the Public Health Service.

In 1925 a plan was put into operation whereby immigrants about to proceed to the United States are examined abroad. Officers of the Consular Service, the Bureau of Immigration, and the Public Health Service make the necessary inspections, and thus enable the selection of more desirable aliens for admission to this country. The steamship companies also examine the immigrant, as they are liable to a fine, as well as having to bear the expense of a return trip, if the alien is rejected on arrival. He may be so rejected for cause whether he has a visa from the consul on the other side or not.

Organization and Personnel. The Bureau of Immigration consists of the central headquarters in Washington and the field force outside, known as the Immigration Service at Large. There are about fifty employees in Washington and over two thousand in the field, not including medical officers from the Public Health Service. Of the latter, 167 were in 1925 assigned to this work in eighty-five ports and stations in this country and twelve ports in Europe. Seventy-four of the 155 medical officers on immigration duty in the United States and its insular possessions, and four of the twelve in Europe are engaged exclusively in the medical inspection of aliens. The remainder combine this work with other duties. In addition to the medical officers, the Public Health Service has 2400 employees on immigration and all hospital work.

Appropriations. For the fiscal year 1925, the amount appropriated to the Bureau of Immigration was $4,691,840, while the sum for 1926 is over $5,000,000. Since 1909 the appropriations for medical examinations have been included in those of the Public Health Service. In 1925 the amount was $4,900,000,[24] or more than half of the total for the entire Public Health Service.

[24] This includes some other medical examinations and all hospital work, but not quarantine service.

CHAPTER X

THE DEPARTMENT OF THE INTERIOR.

The Department of the Interior has seven bureaus, several other establishments, and a number of boards and commissioners under its jurisdiction. Among them, two of the bureaus are directly concerned with health problems, two of the other establishments are hospitals, two other bureaus have an indirect interest in the public health, and one has certain medical problems. The Office of Indian Affairs has supervision over the health of the Indian wards of the government, while the Bureau of Education is intrusted with the administration of medical relief for the natives of Alaska. This latter Bureau is also interested in school hygiene and physical education. St. Elizabeth's and Freedmen's hospitals are attached to the department. The Geological Survey is indirectly concerned with sanitary engineering through its work on water resources, while the National Park Service has certain health problems, and the Pension Office has the duty of making certain medical examinations.

The Office of Indian Affairs. The Medical Division of the Office of Indian Affairs in the Department of the Interior is charged with the care of the health and the furnishing of medical relief to the Indian wards of the government. This Division was created in 1924, though there had been a health section in the Division of Education since 1909.

History and Development. Since the original inhabitants of this country were the Indians, our government has been concerned with Indian affairs from its beginning. Laws regulating trade with the Indians were passed in the early days of the Republic and the Office of Superintendent of Indian Trade was created in 1806, and continued until 1822. In 1824 a Bureau of Indian Affairs was established in the War Department by the Secretary of War. In 1832 Congress passed a law which created the

Office of Commissioner of Indian Affairs and continued it in the War Department. When the Department of the Interior was formed in 1849 the Office of Indian Affairs was transferred to it, where it has been ever since.

The only order on record dealing with health while the Indians were under the jurisdiction of the War Department seems to have been one concerning the moving of Indians from one country to another. In this order, it was stipulated that care should be taken that the best sanitary conditions should prevail and that the health of the Indians should be carefully guarded. Physicians were employed during those days, though more for the benefit of the government agents than for the Indians. Army surgeons were generally accessible and were frequently called upon to render medical care. The change from the early nomadic existence of the Indian to the more sedentary life on the reservation accentuated the health problems of the race and caused the increase of many disease conditions.

The first recognition by Congress of the medical needs of the Indian was contained in an act of May 5, 1832 (4 Stat. L., 515), which appropriated $12,000 for the purpose of purchasing "genuine vaccine matter" and employing physicians to administer it. The treaty of 1836 with the Ottawas and the Chippewas provided for the payment by the government of $300 a year "for vaccine matter, medicines, and the services of physicians, to be continued while the Indians remain on their reservations." Later treaties with other tribes also provided for physicians and in a few cases for hospitals.

In 1873 the first organized effort was made to deal with the health of the Indians. In that year a Division of Medicine and Education was established and was continued until 1877. There was great need for such work, as disease had been a potent factor in decreasing the Indian population. As early as 1865 a Senatorial committee had stressed this rapid decrease and had attributed no small part of it to contact with civilization and the consequent ravages of disease. In spite of this fact, the Division of Medicine was discontinued in 1877, not to be revived until 1909 by a departmental order, although there was always a certain amount of medical service in the field.

The first hospital for Indians was established in 1882. The growth in the number of hospitals is shown below:

1888	4	1917	81
1900	5	1918	87
1911	50	1919	87
1912	53	1920	87
1913	48	1921	85
1914	51	1922	73
1915	74	1923	77
1916	81	1924	79

The reduction in 1922 is due to increased cost of maintenance and to a decrease in appropriations.

Hospitals are classed as insane, sanatoria, general, agency, school, and emergency. The one hospital for the insane is at Canton, South Dakota. Eight tuberculosis sanatoria are now maintained, with a capacity for 624 persons, and these draw their patients from all the reservations. General hospitals draw their patients from a larger area than do agency hospitals, but otherwise are the same. School hospitals are primarily for the treatment of the pupils in the boarding schools, although relief is extended to other persons when necessary.

Current Activities. There are at present approximately 347,000 Indians in the United States, including the Five Civilized Tribes. While they are citizens by recent enactment, and while some have become entirely independent of the control of the national government, many of them are in greater or in less degree wards of the government. While the Indians are scattered throughout the country, Oklahoma has the largest number, 119,255. In general, the majority are in the states of the Southwest and West, Arizona, New Mexico, South Dakota, etc. In 1924 there were 210 widely scattered reservations, with ninety-five agencies, each under a superintendent. Practically all of the agencies have day or boarding schools, in connection with which there is usually a hospital, though there is sometimes an agency hospital.

The employees of the Medical Division treat diseases among the Indians, and to a slight extent do some preventive work. The Service has in the past prepared pamphlets on tuberculosis[1] and

[1] Murphy, J. A., Manual of tuberculosis (1910); Tuberculosis among Indians (1917).

Indian babies,[2] which have been fairly well distributed, and use has been made of the many other government publications on health.

The Indian race has been considered for many years to be a dying one. The Medical Division cites figures to show, however, that this is no longer the case. In 1913 the general death rate among the Indians was 32.24 per thousand population. In 1918 it had been reduced to 29.42 per thousand population, while in 1920 it was 22.33. The birth rate in 1918 was 29.42 per thousand population and in 1920 was 31.67. These figures include the entire Indian population, except the Five Civilized Tribes, where normal birth and death rates are said to exist.

Trachoma studies and efforts among Indians in the Southwest were undertaken by the Public Health Service in 1925 at the request of the Secretary of the Interior. During the influenza epidemic of 1918 the Public Health Service detailed 362 temporary physicians for work among Indians.

Organization. The Medical Division[3] operates directly under the Commissioner of Indian Affairs, who is assisted by an Assistant Commissioner. There is also a nursing unit, consisting of three nurses, which was formed at the same time that the Medical Division was created in 1924.

In that year the Division had the following personnel:

Position	Number employed	Salary
Chief Medical Supervisor	1	[4] $5200
Medical Supervisor	1	[4] 3800
Special Physicians	6	[5] 3000
Traveling Nurses	6	[5] 1500
Field Dentists	6	1860
Agency and School Nurses	100	....
Agency and School Physicians	160	....
Contract Physicians	50	....
Field Matrons	90	....
Total of Health Personnel	420	

[2] Indian Babies; how to keep them well (1916).

[3] Stevens, W. S., Indian service doctor replaces the medicine man, *Nation's Health*, June, 1925.

[4] Allowed transportation expenses and a *per diem* of $3.50 in lieu of subsistence when in the field in addition to salary.

[5] Allowed transportation expenses and actual subsistence expenses, not to exceed $3.50 a day when on duty, in addition to salary.

The administrative duties of the Medical Division include the approval of changes in health personnel, construction and repair of hospitals, purchase of medical and hospital supplies, and all other expenditures for health work, together with the allotment of funds for such purposes. Instructions are issued through the superintendents to the field personnel and directly to the traveling physicians and dentists. Forms for reports are prescribed and examinations are made and action taken upon such reports of special physicians, field dentists, regular physicians, field matrons, and hospitals.

The Chief Medical Supervisor is Dr. R. E. L. Newberne, who was appointed in 1918 after four years' service with the Indian Office and thirteen years' in the Philippine Health Service, then controlled by the United States Public Health Service. The Chief Medical Supervisor directs the employees and facilities of the health service at large, and makes recommendations for the improvement of the service to the Commissioner of Indian Affairs. In addition to his other duties, he acts as principal epidemiologist for the Office of Indian Affairs.

The duties of the Medical Supervisor are of the same general character, though somewhat more restricted in scope.

The special physicians of the Indian Service are primarily specialists in the diseases of the eye, ear, nose, and throat. They also take charge of epidemics, fill special assignments, and make district and local inspection reports to the Commissioner. The service is divided into six special physician districts.

Traveling nurses accompany special physicians, assisting them in the work and taking care of all patients operated on or treated by the special physicians.

Field dentists travel from jurisdiction to jurisdiction in the respective districts, and perform dental work for the pupils of the schools and for the reservation Indians. The service is divided into seven dental districts.

The difference between agency and school nurses is in most instances a difference of funds from which they are paid. An agency nurse is paid from agency funds, and a school nurse from school funds. The duties are practically the same when they are employed in an agency hospital or a school hospital.

The Field Nurse is the public health nurse of the reservation. This name differentiates her from the hospital or school nurse. Her duties and the demands on her time are comparable to those of any county public health nurse. It is hoped in the future to be able to increase this service materially, with much emphasis on health education.[6]

Field Matrons are employed in order to bring about the improvement of home, educational, moral, sanitary, environmental, and social conditions for the advancement of the Indian people. The Field Matron comes into the closest relationship with the family and has the best opportunity to influence the home circle, especially the mother and the girls; therefore, she is particularly charged with the duty and responsibility of developing the higher standards of living, of inculcating a desire for progress, and of evolving plans to make the home more attractive. According to a statement of the Commissioner: "The duties of the Field Matron are too varied and extensive for brief enumeration. Many of the helpful things that she may do are not subject to schedule classification and her influence for good can be measured only in terms of human destinies."

Personnel. The growth in the number of positions authorized for health service is shown in the following table. During the war, and since, the Office of Indian Affairs has not been able to keep all of the positions filled. Of the physicians, about seventy are contract physicians, and the remainder on full time.

Year	Physicians	Nurses	Hospital employees	Field matrons
1895	74	8	7	3
1897	84	24	21	16
1898	83	32	32	30
1899	87	30	19	29
1900	83	25	15	21
1905	96	33	10	40
1918	151	88	158	82
1919	154	91	158	82
1920	160	98	158	78
1921	168	99	155	75
1922	172	102	150	75
1923	177	106	154	63
1924	184	110	156	63

[6] Letter from the Assistant Commissioner, January 28, 1925.

The principal diseases with which the medical service has had to cope have been tuberculosis [7] and trachoma. It is estimated that in 1920 there were nearly 25,000 cases of tuberculosis and over 30,000 cases of trachoma, among some 200,000 Indians, not including the Five Civilized Tribes. In that year, there were 1230 deaths from tuberculosis.

Appropriations. In 1909 a special appropriation was made by Congress (35 Stat. L., 642) to investigate, treat, and prevent the spread of trachoma. In the same year a medical supervisor was appointed for the entire service and the systematic organization of medical work dates from this time. In 1911 began the first of the annual appropriations for "the prevention and treatment of tuberculosis, trachoma, smallpox, and other contagious and infectious diseases" (36 Stat. L., 271). A sum of $40,000 at the beginning has gradually increased to $700,000 for the fiscal year 1926, as shown in the following table:

1911	$ 40,000	1919	$375,000
1912	60,000	1920	350,000
1913	90,000	1921	355,000
1914	200,000	1922	370,000
1915	300,000	1923	370,000
1916	300,000	1924	370,000
1917	350,000	1925	500,000
1918	350,000	1926	700,000

The foregoing appropriations do not include all that is spent for health purposes, but simply the specific appropriations made for "Relieving distress and preventing disease among Indians."

In 1912 the Public Health Service was authorized (37 Stat. L., 519) to make a survey of contagious and infectious diseases among the Indians. The report [8] revealed much disease and many insanitary conditions. The Bureau of American Ethnology of the Smithsonian Institution had collected data on tuberculosis in previous years which it had reported at the Sixth International Conference on Tuberculosis in 1908.

[7] See Report of Committee of National Tuberculosis Association: Tuberculosis among the North American Indians (1923); Senate Committee print (67 Cong., 4 sess.).

[8] 62 Cong., 3 sess., S. doc. 1038 (1913).

The Bureau of Education. Two of the divisions of the Bureau of Education are concerned with public health. These are the Division of School Hygiene and the Alaska Division. The Bureau of Education was created by the act of July 12, 1870 (16 Stat. L., 230), though there had previously been an Office of Education (15 Stat. L., 92), which had succeeded the Department of Education, formed by the act of July 20, 1867 (14 Stat. L., 434).

The Division of School Hygiene. A Division of School Hygiene and Physical Education was created in the Bureau of Education of the Interior Department by an order of the then Commissioner of Education, P. P. Claxton, October 23, 1911. This order was made possible by the provision in the appropriation act for 1912 for "Investigation of rural education, industrial education and school hygiene."

The scope and purposes of the Division of School Hygiene were outlined by the Commissioner in his annual report for 1912, as follows:

1. To furnish to all who seek it, information regarding the sanitary construction of school buildings.
2. To bring together at the Bureau information relating to school hygiene and sanitation and to render this information accessible to school authorities and all others interested.
3. To gather and prepare for publication information concerning the hygienic condition of school buildings and grounds throughout the country.
4. To conduct all correspondence referred to it wherein advice and information are sought on matters of school hygiene and school sanitation.
5. To prepare bulletins on such special topics as the commissioner may from time to time direct.
6. To direct such coöperative investigations as shall be made in connection with the Bureau on matters relating to the hygiene of the school children.
7. To compile and send out bibliographies on special topics in school hygiene, school sanitation, and medical inspection.
8. To assist in any work connected with the Bureau which the commissioner may see fit to assign to the Division.

History and Development. During the first three years of the existence of the division, in which time there was a full time specialist in charge for one year only, the work undertaken consisted of answering correspondence, giving out information, com-

pilation of bibliographies, preparation of exhibits on school hygiene for the Fifteenth International Congress on Hygiene and Demography and the Fourth International Congress on School Hygiene, a survey of hygienic conditions of rural school houses, and the preparation for lending purposes, of cardboard models and three types of school houses.

In the following three years (1915-1917) the division had the part-time services of two special agents, one in Washington and the other in Nashville. The former conducted correspondence, edited bulletins, and prepared annual surveys of progress in educational hygiene. The latter did much work throughout the country on school architecture and in helping in surveys of rural schools. A bulletin on open air schools was prepared by the division in collaboration with Sherman C. Kingsley of the Elizabeth McCormick Memorial Fund. Other bulletins on Medical Inspection in England, Physical Growth and School Progress, School House Sanitation, and Physical Education in Secondary Schools were also issued.

In 1918 the Division again had a full-time specialist in charge for the first time since 1912. In addition to continuing its routine duties as outlined above, it did much work on physical education. On February 26, 1918, a conference was held in Atlantic City under the auspices of the Bureau of Education for the purpose of discussing ways and means of promoting a nation-wide movement to establish physical education, including health instruction and training as a part of the education of all children. As a result of this and subsequent conferences, the Playground and Recreation Association of America created a National Physical Education Service, with an office in Washington, for the specific purpose of promoting state and federal legislation for physical education. Through the help of this service, thirty-three states now have laws making physical education and other health activities an essential part of the school program. The Washington office of this service was closed in 1924, and the work is continued from the Association headquarters, 315 Fourth Avenue, New York City.

Other activities by the Division during this year included cooperation with a number of war-time committees. In coöperation with the Medical Section of the Council of National Defense, a pamphlet on sex education for high school boys entitled "Keeping

fit" was prepared and issued. An analytical summary of state laws on physical education was also issued.

In 1919, besides the full-time specialist in charge, and a part-time state agent on schoolhouse construction and sanitation, there was added a full-time assistant in health education. Temporarily, there was some field assistance. Among studies and surveys made or participated in during that year and the following year, were the surveys of the school system of the state of Alabama and the city of Memphis, and studies of physical education in normal schools, school health supervision, and janitor service in city schools.

For several years, beginning in the late fall of 1918, the bureau had the active assistance of the Child Health Organization of America. This association was formed in the spring of 1918 as a branch of the National Child Labor Committee, primarily for the purpose of studying malnutrition among school children. It later became independent and, at the request of the Secretary of the Interior, gave assistance to the Bureau of Education. Until July, 1919, the director of the Child Health Organization acted as special collaborator, and office assistance was supplied by the Child Health Organization.[9] Five publications in editions of nearly a million were issued during the first year. The special appropriation for printing was made from the President's War Emergency Fund. These formed the beginning of the Health Education Series.

In 1922 the name of the Division was lengthened to that of School Hygiene and Physical Education.

The appropriations for this division for salaries, travel, and publications have not been large and have never reached much over $20,000 a year.

Present Organization and Activities. In 1922 W. S. Small, Ph. D., resigned as Chief of the Division, and was succeeded by James F. Rogers, M. D., Dr. P. H. The personnel in 1925 consisted of three full-time specialists in School Hygiene and Physical Education, one part-time specialist in School House Construction and Sanitation and one full-time secretary and clerk.

[9] In 1922 this agency was merged with the American Child Hygiene Association to form the American Child Health Association (370 Seventh Ave., New York).

The work of the division consists in furnishing information on all features of school health work through bulletins and by correspondence in reply to special letters of inquiry from all over the country. Its publications on school housing, medical inspection, school feeding, health education, physical training, playground management, legislation for physical and health education, etc., now number about fifty. The demand has far exceeded that for other publications of the bureau, a fact which indicates the actual interest and progress in health work in the schools of the country. The division has still further stimulated such work by the articles which it contributes to "School Life," the monthly publication of the bureau.

The Division, has, each year, arranged a number of important conferences of workers in school health. It also furnishes speakers for various meetings of teachers, and school nurses, parents and others interested in school health work.

The division takes part in the surveys of schools carried on by the bureau in many cities, and it offers advice not only as to school sanitation, the organization and planning of courses, etc., but also in the construction and remodeling of school buildings, gymnasia, swimming pools, etc.

Publications. Pamphlets prepared by the Division have included the Health Education Series, a Physical Education Series, and School Health Studies. In addition, cards, posters, and classroom weight records have been issued. The list is as follows:

HEALTH EDUCATION SERIES

No. 1. Wanted, teachers to enlist for child health service.
No. 2. Diet for the school child.
No. 3. Summer health and play school.
No. 4. Teaching health. By Lucy Oppen.
No. 5. Child health program for parent-teacher associations and women's clubs. By Lucy W. Collier.
No. 6. Further steps in teaching health.
No. 7. The lunch hour at school. By Katharine A. Fisher.
No. 8. Health training for teachers. By Robert G. Leavitt.
No. 9. Your opportunity in the schools. By L. Emmett Holt.
No. 10. Suggestion for a program of health teaching in elementary schools. By J. Mace Andress and Mabel C. Bragg.
No. 11. Milk and our school children. By Bernice C. Reaney.

No. 12. Sleep. By Harriet Wedgwood.
No. 13. Dramatics for health teaching. By Harriet Wedgwood.
No. 14. The kindergarten and health. By Arnold Gesell and Julia Wade Abbot.
No. 15. Suggestions for a program for health teaching in the high school. By Dorothy Hutchinson.
No. 16. The continuing need for teachers of child health. By Dorothy Hutchinson and Harriet Wedgwood.

PHYSICAL EDUCATION SERIES

No. 1. Preparation of school grounds for play fields and athletic events. By Dorothy Hutchinson.
No. 2. Athletic badge tests for boys and girls.
No. 3. Suggestions for a physical education program for small secondary schools. By Walter F. Cobb and Dorothy Hutchinson.
No. 4. Athletics for women. By J. F. Rogers.

SCHOOL HEALTH STUDIES

No. 1. Health for school children.
No. 2. The child health school. By Lydia J. Roberts.
No. 3. Who's who in Healthland. By Anne Whitney.
No. 4. Growing healthy children. A study of health supervision in the Trenton, N. J., schools. By Mrs. Ina J. N. Perkins
No. 5. Health promotion in a continuation school. By Harriet Wedgwood.
No. 6. Municipal and school playgrounds and their management. By J. F. Rogers.

The Alaska Division. Among the administrative duties of the Bureau of Education is the care of the natives of Alaska. This territory was purchased from Russia in 1867 and was given a civil government in 1884 (Act of May 17; 23 Stat. L., 27). At that time the duty of providing education for the children of Alaska was placed upon the Secretary of the Interior, who delegated the duty to the Commissioner of Education on March 2, 1885. From the first, the teachers in these various outposts of civilization had to cope with diseases and epidemics and with household conditions and sanitation. There are few professional facilities for medical and sanitary care, and so teachers have been and are given elementary instruction in medical aid and furnished with supplies for

emergency cases. By 1909, however, the division had arranged for nine physicians, and from then on, has had from fifteen to twenty-five physicians and nurses on duty each year in Alaska. Hospitals are likewise maintained at five centers, Juneau, Kanakanak, Akiak, Nulato, and Noorvick, the first having established at Juneau in 1910.

A survey of health and sanitary conditions in southern Alaska was made in 1911 by an officer of the Public Health Service, who was detailed at the request of the Commissioner of Education. Tuberculosis, pneumonia, rheumatism, and venereal diseases were found to prevail to an alarming extent. As a result of this report the Public Health Service detailed an officer for an indefinite term to supervise all measures for medical and surgical relief, to instruct the teachers in sanitary subjects, and to act in an advisory capacity to the Superintendent of Education of Natives of Alaska. The first separate appropriation for medical relief in Alaska was made in 1915 (38 Stat. L., 822) and consisted of $25,000. This amount was doubled in 1916 and has been increased somewhat for each succeeding year, until in 1925, $110,000 was authorized. The appropriation acts granting these sums to the Bureau of Education require that they shall be utilized with the advice and coöperation of the Public Health Service.

The population of Alaska is now about 55,000 of whom 27,000 are natives. The work of the Bureau of Education extends over eighty-five widely scattered settlements. It is in charge of the Chief of the Division, with an office in Seattle. The total number of employees authorized under the appropriation of $122,320 for medical relief for the fiscal year 1926 is forty-three.

Medical relief in isolated stations along the coast of Alaska is also often given by the Coast Guard of the Treasury Department. Certain activities relating to food, tubercular cattle, and home economics in Alaska are carried on under the auspices of the experiment stations of the Department of Agriculture and are described elsewhere.

St. Elizabeth's Hospital. St. Elizabeth's Hospital is the government institution for the insane. Legislation authorizing its organization was passed in 1855 (Act of March 3, 10 Stat. L., 682), although an appropriation of $100,000 for the purpose had

been granted three years previously. The object of the institution was stated to be "the most humane care and enlightened curative treatment of the insane of the Army and Navy of the United States and of the District of Columbia." The name "St. Elizabeth's" was given to it in 1916 (39 Stat. L., 309). From the beginning the Hospital has been under the general jurisdiction of the Secretary of the Interior, who appoints the Superintendent. There is a Board of Visitors, consisting of nine citizens of the District of Columbia, appointed by the President, whose duties are to make necessary by-laws to govern the hospital. The Surgeons General of the Army, Navy, and Public Health Service were members of this Board in 1925.

The patients admissible to the Hospital, according to the law, are as follows:[10]

1. Insane persons belonging to the Army, Navy, Marine Corps, and Coast Guard.

2. Civilians employed in the Quartermaster's, Pay, and Subsistence Departments of the Army, who may be, or may hereafter become insane while in such employment.

3. Men who, while in the service of the United States, in the Army, Navy, or Marine Corps, have been admitted to the Hospital, and have been thereafter discharged from it on the supposition that they have recovered their reason, and have, within three years after such discharge, again become insane from causes existing at the time of such discharge, and have no adequate means of support.

4. Indigent insane persons who have been in either of the said services and have been discharged therefrom on account of disability arising from such insanity.

5. Indigent insane persons who have become insane within three years after their discharge from such service, from causes which arose during and were produced by said service (12 Stat. L., 23; 14 Stat. L., 93; 31 Stat. L., 7; 37 Stat. L., 591; 38 Stat. L., 800).

6. Insane patients of the Public Health Service (18 Stat. L., 486; 32 Stat. L., 712; 37 Stat. L., 309; 39 Stat. L., 309; 40 Stat. L., 644).

7. Inmates of the Soldier's Home who become insane (23 Stat. L., 213; 39 Stat. L., 309).

8. Inmates of National Home for Disabled Soldiers who become insane (22 Stat. L., 330; 33 Stat. L., 731; 39 Stat. L., 309).

[10] See, Laws governing the admission of patients to St. Elizabeth's Hospital. Department of the Interior (1925).

9. Interned persons under jurisdiction of War or Navy departments who become insane (39 Stat. L., 309; 39 Stat. L., 558; 40 Stat. L., 373).

10. American citizens adjudged insane in the Canal Zone (40 Stat. L., 179).

11. Insane persons of the District of Columbia, including persons charged with crime, or prisoners (10 Stat. L., 683; 22 Stat. L., 251).

12. Indigent insane non-residents of the District of Columbia, upon the order of the Board of Commissioners of the District (33 Stat. L., 316).

13. Insane persons accused of crime, or persons becoming insane while serving sentence in the United States penitentiary (11 Stat. L., 158).

14. Beneficiaries of the United States Veterans' Bureau (40 Stat. L., 1302; 42 Stat. L., 147).

15. Beneficiaries of the Employees' Compensation Commission (18 Stat. L., 486; 39 Stat. L., 742).

On November 1, 1925, there were 4430 patients in the Hospital. The number of physicians and scientists on that staff at that time numbered fifty-seven, and there were about twelve hundred additional employees. The appropriation for maintenance during the fiscal year 1925 was $900,000, although reimbursements from other sources for the care of patients amounted to about $2,000,000 additional.

The administration of the Hospital, under the Superintendent, is divided into two parts. One, under an Administrative Assistant, is concerned with business and financial affairs; the other, under the First Assistant Physician, deals with medical and scientific matters. Medical administration is further subdivided into several services. There are, for instance, two Clinical Directors, one male and one female, who, with the aid of senior assistant physicians, have charge of respective (male or female) parts of the institution. There are also divisions of Clinical Psychiatry, Internal Medicine, and laboratories. An Out-Patient Department, with headquarters in the city, looks after patients on parole, or for whom parole is contemplated, and does other sociological work. A training school for nurses is also maintained at the Hospital, and there is a special department for Veteran's Bureau patients. There is, in addition, a medical library.[11]

[11] White, W. A., St. Elizabeth's Hospital, *Medical Journal and Record*, April 16, 1924.

Freedmen's Hospital. Freedmen's Hospital, under the jurisdiction of the Department of the Interior, is a hospital for colored patients. It is located in the District of Columbia and receives the majority of its patients from that area, though in 1924 indigent patients represented thirty-three states, and pay patients, twenty-eight states. The Hospital cares for about four thousand patients a year.

The Freedmen's Hospital was established in 1871 (16 Stat. L., 506), and placed under the supervision of the Secretary of War, where it continued until 1874, when it was transferred to the Secretary of the Interior (18 Stat. L., 223). The number of patients has grown from 190 in 1875 to 2427 in 1900, and to 4121 in 1924. The hospital has a staff of six physicians, six nurses, about a dozen internes, and a visiting staff of some fifty physicians. It maintains a school for nurses, which has graduated about four hundred students. In 1924 thirteen received diplomas.

The appropriation to the Hospital under the Interior Department was $174,700 in 1925, though $42,500 more is carried in the District of Columbia appropriation act for care and treatment of indigent patients. Receipts from pay patients amounted to nearly $30,000 in 1924.

The Geological Survey.[12] The Geological Survey of the Department of the Interior is engaged in making topographic, geologic, and water-resource surveys of the United States, and in publishing the results of these surveys. Its work in regard to water resources, which is done by the Water Resources Branch, furnishes information of fundamental importance in the field of sanitary engineering, especially in developing and improving the public water supplies of cities throughout the country. Some of this work is done in formal coöperation with state boards of health.

The Geological Survey was established in the Interior Department in 1879 (20 Stat. L., 394), although previously geological and geographic surveys had been made by the National Government. In 1888 it was directed to investigate irrigation in arid lands. This authority was repealed two years later, but in 1894 an appropriation of $12,500 was made for "gauging the streams and

[12] The Geological Survey. Institute for Government Research, Service Monograph No. 1 (1918).

determining the water supply of the United States, including the investigation of underground currents and artesian wells in arid and semiarid sections." This appropriation was doubled in 1896, quadrupled in 1897, remaining at $50,000 until 1899. Then it was increased to $70,000 in 1900, and to $100,000 for 1901. In 1902 the Reclamation Act was passed, its administration being entrusted to a division of the Hydrographic Branch of the Geological Survey until 1907, when the Reclamation Service was set up as an independent bureau in the Interior Department.

Since 1888 the Geological Survey has carried on important surveys of water resources, and since 1894 it has been engaged in the project of surveying all of the surface waters of the country, a tremendous task and one of great value. An attempt is also being made to locate all ground waters throughout the United States, a matter having a sanitary as well as an economic aspect.

The main work of the Water Resources Branch, therefore, is the gauging of streams to determine the quantity of water which they carry. Daily records of stream discharge are at present obtained at more than 1700 gauging stations. When results have been obtained for a stream over a period of ten to twenty years, it is possible to make a fairly close estimate of the maximum, minimum, and average future yield of that stream and of others where conditions that affect stream flow are similar. Systematic surveys and investigations of the ground-water conditions in different parts of the country are carried on, to determine the occurrence, quantity, head, quality, and availability of the water that exists below the surface and is recovered through wells. The work of the branch on the quality of water is confined to a consideration of the physical characteristics of water and the chemical composition of its dissolved mineral matter. The results of this work have no direct bearing on health problems, but are always to be considered among the factors involved in selecting the source of a public or private supply.

The Water Resources Branch maintains two small but well equipped laboratories, one for making chemical analyses of both surface and ground waters, and one for making tests of porosity, permeability, and other physical properties of water-bearing materials. The results of these laboratory tests are extensively utilized by sanitary engineers.

Recently the Water Resources Branch has coöperated with the United States Public Health Service in an intensive study by that Service of the pollution of ground waters by human excreta. In this coöperation the work of the Water Resources Branch is restricted to the hydrologic phases of the problem.

A series of reports, known as Water-Supply Papers, has been published by the Geological Survey since 1896, nearly six hundred of these papers having been issued to date. Most of them relate to stream measurements, but there are also many papers relating to ground water, quality of water, and water power in different areas. Some of the earlier pamphlets in this series dealt with stream pollution by industrial wastes and sewage, but this subject has not been under investigation by the Geological Survey since 1909, when this line of work was transferred to the Public Health Service.

The National Park Service. The National Park Service was established as a bureau in the Department of the Interior in 1917, having been created by the act of August 25, 1916 (39 Stat. L., 535). National parks had, however, been in existence since 1872, when the Yellowstone National Park was established. To-day there are nineteen of them, with a total area of 11,387 square miles. In addition, there are thirty-five "national monuments," usually consisting of small areas created by executive order to conserve objects and areas of historic or scientific importance. A few of these national monuments are, however, under the jurisdiction of the War or Agriculture department, the former having nine and the latter fourteen.

Aside from their value as recreation centers and places for outdoor life, the national parks are concerned in public health by virtue of the sanitary problems created by the influx of large numbers of persons. Stream pollution must be prevented and pure water supplies maintained for human consumption. Sewage and waste must be properly disposed of, insects which may spread disease must be eliminated, and medical service must be provided for tourists. In other words, the public health problem is similar to that encountered in any rural area within a state.

For a number of years sanitary and medical assistance has been rendered to the national parks by the Public Health Service at

the direct request of the Secretary of the Interior. In fact, in a statement of policy on national parks issued on March 11, 1925, by Secretary Hubert Work, occur these sentences, "In the solution of administrative problems in the parks and monuments relating both to their protection and use, the scientific bureaus of the government are called upon for assistance. For instance, in the protection of the public health, the Public Health Service of the Treasury Department coöperates; in the destruction of insect pests in the forests, the Bureau of Entomology in the Department of Agriculture is called upon and in the propagation and distribution of fish, the Bureau of Fisheries in the Department of Commerce gives its hearty coöperation."

The assistance rendered by the Public Health Service consists of the assignment of sanitary engineers during the park season, which is approximately from May to October, and the detail of one or more medical officers throughout the year. In order to show the type of service performed, for it is an important illustration of what may be called "contract" health service provided by one bureau for another, the outline of activities, as given in the annual report of the Public Health Service for the fiscal year 1924, will be quoted in full:

Yellowstone. A complete sewerage system with treatment plant designed by this district was installed at the Lake Junction. This plant receives the sewage from all the buildings and camps at the junction. The treatment plant consists of a settling tank with separate sterilization chamber and a small concrete building for housing the chlorine machine. At the Canyon Junction a sewerage system, settling tank, and sterilizing equipment were installed to take care of the sewage from the Canyon Hotel, and similar designs were prepared at the canyon for sewers, tank, and sterilizing apparatus for taking care of the sewage from the Government automobile camp, ranger stations, and the stores. At the Fishing Bridge, West Thumb, and Lewis Lake, plans were made for disposing of sewage from comfort stations. These works will be constructed during the next fiscal year. At the eastern entrance to the park a sewerage system and treatment plant were laid out and the detailed plans will be prepared by an assistant engineer of the Park Service.

Complete surveys of all the water supplies of the park were made and samples taken for bacteriological analysis. A special report on the supply at Mammoth Hot Springs was made, which included recommendations for improving the physical properties

of the water. The water supplies of the park are satisfactory from a bacteriological standpoint, but in many places there is a shortage of water that must be met within the next few years. This is particularly true at the canyon, and surveys were made to locate a single supply that will be sufficient for all consumers at this junction.

The dairies supplying milk were inspected, and the reports indicate that the milk supplied to the park was of high quality throughout the year.

The disposal of garbage has always been a serious problem in the park, and beginning this year a clean-up program was started at all the old dumps, and new burial pits were located at each junction. Bear feeding platforms were installed at the pits, and each day garbage that has been worked over is thrown into the pits and covered.

Mosquito-control work was carried out again this spring along the lines worked out last year. It was stated by the superintendent of the park that there was a very material reduction last year as compared with former years. With a more efficient organization each year and more funds available for drainage, it is believed that the mosquito nuisance can be practically eradicated at the more important junctions in the park.

Yosemite. The work in Yosemite during the year included the following activities: (1) Inspections of the sanitary conditions of all places handling, storing, and serving foods and soft drinks; (2) preparation of plans for remodeling bathhouses and inclosures around the two swimming pools; (3) design of an incinerator for burning garbage; (4) coöperating with the park civil engineer in the operation of the sewage-treatment plant; (5) bacteriological examination of water and milk supplies and water flowing in Merced River above and below the sewage-treatment plant; and (6) the examination and report on two cases of typhoid fever that occurred at the same time among employees of the Government.

Grand Canyon. On account of extensive improvements, probably amounting to more than two million dollars, that the Santa Fé Railroad and Fred Harvey Companies expect to make at the south rim of the Grand Canyon during the next few years, considerable time was spent at the Canyon during the last year. The work in which this district has an interest is as follows: (1) The design of a sewerage system and a treatment plant to be built by the Government at an estimated cost of $72,000 that will produce an effluent that can be used for boiler and irrigation purposes and for flushing toilets; (2) the construction of a new water-supply system by the Santa Fé Railroad at an estimated cost of $300,000; (3) the disposal of garbage by incineration or feeding to hogs; (4) the design of a swimming pool; and (5) the problems of general sanitation.

At the north rim of the Grand Canyon a thorough survey was made of the water supplies, and recommendations were given as to the developments that can be made with the water supply available.

Sequoia. A new and complete water-supply system was installed during the year under the general supervision of this district, and a sewerage system and treatment plant were designed in coöperation with an engineer of the Park Service and construction work started the 1st of June. General inspections of the sanitary conditions of the park were made. A garbage incinerator was designed and partially constructed at the close of the fiscal year.

General Grant. A new water-supply system and a sewerage system and treatment plant were installed during the year and have proven successful in operation. Inspections of the sanitary condition of the concessions and Government automobile camps were made.

Crater Lake. A complete sewerage system and treatment plant were designed to take care of the sewerage from Crater Lake Lodge and the regular inspections of the sanitary conditions in the park were made. Analyses of the public water supply were made and recommendations given for increasing the amount of water delivered to the camp grounds and the Lodge.

Mount Rainier. The work done in Rainier consisted of the regular inspection of the sanitary conditions of the automobile camping grounds and the places handling and selling food, milk, soft drinks, and other food products. Recommendations were also made in regard to the development of a new and adequate water supply for all interests at Longmire and this district laid out a new water-supply line for the automobile camp.

Glacier. A general survey was made of the sanitary conditions of all automobile camps and chalets in the park. Estimates were prepared for the cost of a sewerage system and treatment plant for the Government headquarters at Belton and the money was appropriated in June.

Zion. The Union Pacific Railroad is anticipating an expenditure of about $600,000 in this park for constructing a large hotel and camps. During the past year considerable time was spent in conference with Union Pacific Railroad engineers and Park Service officials regarding plans for sewerage system, treatment plant, a new water supply, and garbage disposal.

Bryce Canyon. The last Congress passed legislation which, under certain conditions, will change this canyon into a national park under the name of Utah National Park. In anticipation of this law being carried out, a visit was made to the Canyon in June to inspect the plans for sewage and garbage disposal which were being worked out at the time for the building program then under way.

Muir Woods. A general inspection of the sanitary conditions was made and recommendations given for improving the water supply and disposing of garbage and refuse.

Park Rangers, in charge of policing, also supervise sanitary measures in the areas under their jurisdiction.

The Bureau of Pensions.[13] The Bureau of Pensions of the Department of the Interior executes the laws granting pensions on account of military or naval service to the United States, and the laws making provision for retirement of civil service employees. It is not, of course, a public health agency, but it maintains a Medical Division, and so deserves brief mention for this reason.

Pensions have been granted by the United States since Revolutionary days. They were administered under the jurisdiction of the Secretary of War and the Secretary of the Navy, respectively, until 1849, when the Interior Department was created and the Pension Office became a bureau of that department.

At the head of the Bureau is a Commissioner, who is assisted by a Deputy Commissioner and a chief clerk. There are eleven, divisions, as follows: Law, Record, Invalid, Widow, Board of Review, Retirement, Medical, Special Examination, Certificate, Finance, and Disbursing.

The Medical Division is in the charge of a Medical Referee, who has the aid of an Assistant Medical Referee. The Medical Referee supervises the examination and revision of the reports of examining surgeons, and such other duties concerning medical and surgical questions as the interests of the service demand. He issues orders for medical examinations and keeps records of them; examines and audits the accounts of examining surgeons; appoints surgeons in the field; and determines all medical questions which arise.

The division has about one hundred employees, of whom twenty-six are medical officers. There are about four thousand examining surgeons in the field, employed on a contract basis. About half a million dollars is appropriated annually for fees and expenses of these examining surgeons. The total appropriation to the bureau is about two hundred million dollars a year. In 1925 it was $224,616,000.

[13] See Weber, The Bureau of Pensions. Institute for Government Research, Service Monograph No. 24 (1923).

CHAPTER XI

THE DEPARTMENT OF COMMERCE

Of the ten bureaus of the Department of Commerce, a division of one, the Division of Vital Statistics of the Bureau of the Census, has a major interest in public health; another, the Bureau of Mines, has an important interest in this subject; while four others are only casually interested in public health. These four are the Bureau of Fisheries, which studies the nutrition of sea foods, and coöperates in developing fish for anti-mosquito work; the Bureau of Standards, which develops industrial safety codes; the Patent Office, which issues patents and trade-marks for drugs and medicines; and the Steamboat Inspection Service, charged with the oversight of sanitary conditions on all steamers licensed by the United States.

The Bureau of the Census.[1] The Bureau of the Census of the Department of Commerce takes the decennial census of the United States and regularly compiles statistics on many different subjects. Data on the dependent, defective, and delinquent classes in institutions; on national fiscal affairs; and other matters are compiled every tenth year between decennial censuses. An agricultural census is taken the fifth year after the decennial census, and manufacturing statistics are collected biennially. Financial statistics of cities are compiled annually, as are also vital statistics and divorce figures.

The Division of Vital Statistics. Vital statistics include births, stillbirths, and deaths, and they have been aptly called the bookkeeping of public health. In the Bureau of the Census, the collection and compilation of these national vital statistics is the duty of the Division of Vital Statistics, one of the seven divisions of the Bureau, the others being Agriculture, Manufacturing, Sta-

[1] See Schmeckebier, The Statistical Work of the National Government (1925). Institute for Government Research.

tistics of Cities and States, Surveys of Current Business, Cotton and Tobacco, and Geography.

Section 8 of an act approved March 6, 1902 (32 Stat. L., 51, 52) entitled "An act to provide for a permanent Census Office," authorized the collection of both birth and death statistics. The act provided that such statistics should be obtained only from the registration records of such states and municipalities as, in the judgment of the Director of the Census, possessed records affording satisfactory data in necessary detail.

An act of July 1 of the same year (32 Stat. L., 714) states that, to secure uniformity in the registration of mortality, morbidity, and vital statistics, it shall be the duty of the Surgeon General of the Public Health and Marine Hospital Service to prepare and distribute suitable and necessary forms for the collection and compilation of such statistics and to issue them as part of the reports of the Service. In view of the collection of the data by the Census Bureau, the Public Health Service has never attempted to assemble birth and death statistics, though it has collected morbidity reports for years and has recently inaugurated a plan for a morbidity registration area.[2]

History and Development. The first annual mortality report related to the year 1900 and was published in 1906 as part of a report covering the five years, 1900 to 1904. Previous to that time, mortality reports based on enumerators' returns had been published as early as 1850 and again in 1860 and 1870. Data from such returns and from registration records were published in 1880, 1890, and 1900 (census year). The registration area was recognized as early as 1880, and it was enlarged in 1890 and again in 1900, so that it included in 1900 the New England States, Indiana, Michigan, New Jersey, New York, and the District of Columbia.

Since 1900 the following states have been admitted to the death registration area: 1906, California, Colorado, Maryland, South Dakota, and Pennsylvania; 1908, Washington and Wisconsin; 1909, Ohio; 1910, Minnesota, Montana, North Carolina (municipalities of 100 and over), and Utah; 1911, Kentucky and Missouri: 1913, Virginia; 1914, Kansas; 1916, North Carolina (remainder of state) and South Carolina; 1917, Tennessee; 1918, Illinois,

[2] Lloyd, B. J., A plan to establish a morbidity registration area, Public Health Reports, July 24, 1924.

Louisiana, and Oregon; 1919, Delaware, Florida, and Mississippi; 1920, Nebraska; 1922, Georgia, Idaho and Wyoming; 1923. Iowa; 1924, North Dakota; 1925, West Virginia. There are also seventeen registration cities in non-registration states, making a total of forty states, the District of Columbia, and the seventeen cities before mentioned, or over 80 per cent of the total estimated population of the United States. Only three states remain with unsatisfactory registration laws—South Dakota which had been admitted, but was later dropped, Nevada, and Arizona. This leaves five states with satisfactory laws which will be ready for admission as soon as they can show that the laws are adequately observed.

The first annual report on birth statistics related to the year 1915, though prior to that time, reports of births had been made in the decennial census reports. In 1915 a birth registration area was recognized, including Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New York, Pennsylvania, Rhode Island, Vermont, and the District of Columbia. In 1916 Maryland was added; in 1917, Indiana, Kansas, Kentucky, North Carolina, Ohio, Utah, Virginia, Washington, and Wisconsin were added. None were added in 1918, and in 1919 Rhode Island was dropped because of failure to send in all transcripts of birth certificates for the year. California, Oregon, and South Carolina were added in 1919; Nebraska in 1920; Delaware, Mississippi, New Jersey, and Rhode Island (readmitted) in 1921; Illinois, Montana, and Wyoming in 1922; Florida, Iowa, and North Dakota in 1924; and West Virginia in 1925. Thus, thirty-four states and the District of Columbia, or over 60 per cent of the total population of the United States, comprise the birth registration area.

Maps showing the birth and death registration areas have been issued by the Bureau of the Census.

Current Activities. As already indicated, the principal work of the Division of Vital Statistics is the compilation of birth and death statistics. In addition, the Division compiles life tables, encourages and promotes uniformity in the local registration laws for births and deaths, issues weekly reports of deaths occurring in sixty of the larger cities, makes special studies of various subjects relating to vital statistics, and coöperates in the statistical

work of other government departments and with extra-government agencies interested in vital statistics.

The birth and death statistics are gathered only from the registration area. A state or city is admitted to the birth or death registration area if, on investigation, it is found that 90 per cent of the actual births or 90 per cent of the actual deaths have been reported.

The statistics are based upon the local records. Certificates of birth and death are made by physicians, midwives, and undertakers, for the city or county records. For several years the Bureau of the Census has been urging upon local governments the adoption of standard forms for these certificates, and its efforts have met with considerable success. Agents are employed by the Bureau of the Census to make transcripts of certificates for transmission to the bureau in Washington. They receive, as a rule, compensation at the rate of three cents for each certificate transcribed. Upon receipt in the bureau, the transcripts are edited, and the data tabulated by the punched card system and assembled in report form.

Reports of birth and death statistics are published annually, by calendar years; they are supposed to appear about the end of the year following that to which they relate. Birth statistics are presented in one volume, death statistics (mortality statistics) in another.

In order to extend the registration area, the Bureau of the Census directs a considerable part of the effort of the Division of Vital Statistics to promoting adequate registration in localities outside the present area. In fact, one of the great accomplishments of the division has been the building up of the registration area from practically nothing to its present nearly complete status. This promotion work consists in educating committees, societies, state legislatures, and the public generally, through publications and press notices, as to the importance of complete registration. It also includes a system of testing the completeness of registration of births and deaths in the various states, which is done by means of form letters addressed to clergymen, postmasters, rural carriers, and others, calling for information regarding recent births and deaths. The replies are compared with the registered

births and deaths in the same localities, and serve as a test of the accuracy and adequacy of the registration.

Another important activity is the publication and distribution of the American edition of the "Manual of the international list of causes of death," which is the standard authority. More than 148,000 copies of this twenty-eight page pamphlet were distributed by the division during the fiscal year 1919. The sixth edition was issued in revised form in 1923. The Chief Statistician represented the division at the International Conferences held in Paris in 1909 and 1920 for the revision of the list. The division also publishes the "Index of joint causes of death," and the "Physicians' pocket reference."

The Division of Vital Statistics constructs life tables, which show the rate of mortality and the number of years of expectation of life of various age groups. The geographical field covered by these statistics is limited in the case of the most of the tables to the states that have had for a long time an adequate registration of deaths. These states are New York, New Jersey, Indiana, Michigan, and the New England States. The District of Columbia is also included.

The first publication of life tables was issued in 1916, the statistics referring to the year 1910. This publication, which was entitled "United States life tables, 1910," gave in its preliminary pages a complete explanation of the tables, with illustrative examples of their use. A more complete publication was issued in 1921, entitled "United States life tables, 1890, 1901, 1910 and 1901-1910." Abridged life tables for 1919-1920 were issued in 1923. There was also published in this year "Mortality rates, 1919-1920," in which the tables are considered by the division to be the best of this nature ever put out by the organization.

The Division of Vital Statistics receives weekly telegraphic reports of deaths from sixty of the largest cities. The figures are issued within seventy-two hours after the close of the week to which they relate. These multigraphed statements show, in addition to the number of deaths occuring: (1) The numbers of deaths in corresponding prior periods of time, (2) the estimated populations, (3) the death rate per year, (4) the number of deaths of infants under one year old, and (5) the estimated infant mortality rate.

Monographs are issued from time to time on subjects related to vital statistics. Among these monographs may be mentioned for purposes of illustration those relating to cancer and other malignant tumors, influenza mortality, and the standard nomenclature of diseases and pathological conditions, and of injuries and poisonings.

Organization. The Division is under the direction of a Chief Statistician, W. H. Davis, M. D. There was in 1925 a personnel of sixty-nine including the staff in Washington and in the field. In 1922 the personnel was 124.

The Chief Statistician is assisted by an Expert Chief of Division, who is in immediate charge of the clerical force and of the production of the work. The Division is a complete unit in itself and is related to the rest of the Bureau of the Census only in that it obtains from the Division of Population and from the Geographer, facts of population for census and intercensal years for purposes of calculating rates. The division had its own mechanical equipment until 1923, when it was transferred to a central mechanical section.

Appropriations. Appropriations for the division have come out of the lump sums of the bureau. For the fiscal year 1924, the division received $188,038.54. For the three years constituting the decennial census period, the first year of which ended June 30, 1920, the division had an allotment of $825,000, of which $75,000 was for printing and $250,000 for each year's expenses.

The Bureau of Mines. The Bureau of Mines was established in the United States Department of the Interior by an act of Congress, approved May 16, 1910 (36 Stat. L., 369), and was transferred to the Department of Commerce by Executive Order in 1925. Authority for publishing the reports of the Bureau was given in a joint resolution approved June 25, 1910 (30 Stat. L., 883). A new organic act of the Bureau of Mines was signed by the President on February 25, 1913 (37 Stat. L., 681). The establishment and maintenance of mining-experiment and mine-safety stations under the bureau was authorized by an act approved March 3, 1915 (40 Stat. L., 969).

Section 2 of the Act of 1913 provides as follows:

That it shall be the province and duty of the Bureau of Mines, subject to the approval of the Secretary of the Interior, to conduct inquiries and scientific and technologic investigations concerning mining, and the preparation, treatment, and utilization of mineral substances with a view to improving health conditions and increasing safety, efficiency, economic development, and conserving resources through the prevention of waste in the mining, quarrying, metallurgical, and other mineral industries; to inquire into the economic conditions affecting these industries; to investigate explosives and peat; and on behalf of the Government to investigate the mineral fuels and unfinished mineral products belonging to, or for the use of, the United States, with a view to their most efficient mining, preparation, treatment and use; and to disseminate information concerning these subjects in such manner as will best carry out the purposes of this act.

History and Development. The precursor of the present Bureau of Mines was the Technologic Branch of the Geological Survey which was established by an order of the Secretary of the Interior, April 2, 1907, for the purpose of testing fuels and structural materials. Such work had been started in 1904 under the supervision of the Geological Survey. In May, 1908, Congress authorized an investigation (effective July 1, 1908) of the causes of mine explosions, and this work was assigned to the Technologic Branch. An old arsenal at Pittsburgh was used as an experiment station. During 1908 and 1909, stations equipped with mine-rescue and first-aid apparatus were established at Urbana, Knoxville, and Seattle.

The high mortality among miners, the necessity for intensive effort to prevent needless deaths, and the widespread demand for a separate government bureau to cope with these problems, resulted in 1910 in the formation of the Bureau of Mines. The investigation of structural materials was transferred to the Bureau of Standards of the Department of Commerce and Labor and the new Bureau of Mines was charged with increasing health, safety, economy, and efficiency in the mining, quarrying, metallurgical, and miscellaneous mineral industries of the country.

The bureau began operations on July 1, 1910. Its first work consisted in a continuance, with renewed vigor, of investigations

of accidents in mines. Seven mine-safety cars were operated for this purpose and for rescue work. A compilation of mine-safety laws was begun. The fuel investigations were also carried on. In 1911, in coöperation with the Public Health Service, a study was begun of certain miners' diseases, especially tuberculosis (miners' phthisis) and hookworm. In that year the first national mine safety demonstration was held at Pittsburgh on October 30, 1911.[3]

In the second year of its existence the bureau was organized into five divisions. The Administrative and Miscellaneous Minerals divisions had headquarters in Washington, while the Mining, Mechanical, and Chemical divisions were located at Pittsburgh. The scope of the bureau was considerably broadened in 1913 when the new organic act, part of which is quoted above, went into effect. Coöperation with the states was inaugurated with the assignment of a mining engineer for full-time inspection work in California. In addition to much rescue and first-aid work, investigations of metal mine ventilation and studies of the injurious physiological effects of rock dust were commenced.[4] A sanitary engineer of the bureau visited mining communities, made investigations, and delivered lectures. Pamphlets on health subjects were prepared.[5] The work on fuel and metallurgical matters was also continued

An important study of pulmonary diseases in the Joplin, Missouri, district was begun in 1914, and continued for several years with the aid of an officer of the Public Health Service.[6] The bureau had now five technical divisions: Mining, Metallurgy, Mineral-Technology, Fuels (and Mechanical Equipment), and Petroleum and Natural Gas. The Mining Division, in addition to a staff of mining engineers, included a Safety Commissioner, a Mine Surgeon, and a Sanitary Engineer. Among other accomplishments of that year may be mentioned the production of radium at a cost of one-third of that by previous commercial methods. Forty-

[3] See Bureau of Mines, Bulletin 44, for complete description.
[4] Bulletin 132.
[5] Houses for mining towns, by J. H. White, Bulletin 87; Miners' wash and change houses, by J. H. White, Technical Paper 116.
[6] Pulmonary Disease in the Joplin District, Mo., and its relation to rock dust in the mines, by A. J. Lanza and Edward Higgins, Technical Paper 105.

seven mine-rescue and first-aid contests were held at different places. An improved type of breathing apparatus was developed, and a committee of consulting engineers issued a comprehensive report on prevention of accidents.

When this country entered the World War, in 1917, the activities of the bureau were concentrated as far as possible on military problems. Investigations of gas and gas masks formed an important part of this activity, and much work on minerals was carried on. In addition a study of pulmonary disease in the Butte, Montana, district was made.[7] Several new experiment stations were opened in 1917 and 1918. In the latter year surgeons attached to mine-rescue cars inspected many mines for sanitary conditions. Extensive studies of the effects of exhaust gases from gasoline engines in tunnels and mines have been made during the past two years. These studies set forth the physiological principles applicable to ventilation of any mine, tunnel, chamber, fire room, or other space in which the air is contaminated with carbon monoxide and, particularly, the application of these principles to tunnels for motor vehicles.

The early investigations pertaining to health were made by the personnel of the Bureau of Mines, but later congressional authority was granted to obtain surgeons from the Public Health Service. This developed into a close coöperation between the two services for the study and recommendation of all matters pertaining to health in and around mines and the mineral industries. The relationship led to the establishment of the office of Chief Surgeon in the bureau, with headquarters in Washington. The medical personnel now consists of the Chief Surgeon and six surgeons, detailed from the Public Health Service.

During recent years as the bureau has been enlarged, it has increased its technical investigations, and its safety and health activities have also increased in technical aspects as well as in service. Work being done under the direction of the Chief Surgeon is as follows: sanitary surveys of mining camps of various states, as Illinois, Kentucky, California, Utah, Alabama, New Mexico,

[7] Miners' consumption in the mines of Butte, Montana, by Daniel Harrington and A. J. Lanza, Technical Paper 260.

and Arizona; studies of carbon monoxide poisoning;[8] physiological effects of high temperatures, humidities, and other ventilation conditions;[9] lead poisoning in mines in Utah; lead poisoning from the use of ethyl gasoline in gasoline-burning engines;[10] surveys of medical organizations and sanitary facilities;[11] standardization of first-aid methods for the mining and allied industries; safety and health campaigns; caisson disease, and the use of synthetic atmospheres[12] in its prevention; and hydrogen sulphide poisoning.[13]

Since its organization, the bureau has trained about 115,000 miners in first-aid and rescue work.

Effective July 1, 1925, the bureau, except for its oil-leasing and mineral leasing activities, was transferred to the Department of Commerce, by Executive Order, dated June 4, 1925.

[8] Physiological effects of exposure to low concentrations of carbon monoxide, by R. R. Sayers, F. V. Meriwether, and W. P. Yant. Public Health Reports, May 12, 1922, pp. 1127-1142, Reprint No. 748.

The elimination of carbon monoxide from blood, by treatment with air, with oxygen, and with a mixture of carbon dioxide and oxygen, by R. R. Sayers and W. P. Yant. Public Health Reports, September 7, 1923, pp. 2053-74, Reprint No. 865.

The pyro-tannic acid method for the quantitative determination of carbon monoxide in blood and air, by R. R. Sayers, W. P. Yant, and G. W. Jones. Public Health Reports, October 5, 1923, pp. 2311-2320, Reprint No. 872.

[9] Physiological effects of high temperatures and humidities with and without air movement, by R. R. Sayers and D. Harrington. Public Health Reports, July 20, 1923, pp. 1616-1637, Reprint No. 854.

Effective temperatures for still air conditions and their application to mining, by F. C. Houghton, C. P. Yagloglou, and R. R. Sayers. Bureau of Mines, Reports of Investigations, Serial 2563, January, 1924. 10 pp.

Some effects on man of high temperatures, by W. J. McConnell and R. R. Sayers. Bureau of Mines, Reports of Investigations. Serial 2584, March, 1924. 13 pp.

[10] Exhaust gases from engines using ethyl gasoline, by R. R. Sayers, A. C. Fieldner, B. G. H. Thomas, and W. J. McConnell. Bureau of Mines, Reports of Investigations, Serial 2661, December, 1924. 24 pp.

[11] Change houses in the Lake Superior Region, by Cleve E. Kindall, Bureau of Mines, Technical Paper 289, 1923. 31 pp.

[12] Possibilities in the use of helium-oxygen mixtures as a mitigation of caisson disease, by R. R. Sayers, W. P. Yant, and J. H. Hildebrand. Bureau of Mines, Reports of Investigations, Serial 2670, February, 1925.

[13] Investigation of toxic gases from Mexican and other high-sulphur petroleums and products, by R. R. Sayers, A. C. Fieldner, N. A. C. Smith, *et al.*, Bureau of Mines, Bulletin 231, 1924. 108 pp.

The bureau works in active coöperation with the War and Navy departments, the Bureau of Standards, and other branches of the government. The coöperation with the Public Health Service has already been described. It also works with numerous state and private organizations, such as the First Aid division of the American Red Cross, the National Radium Institute, National Research Council, and many universities.

Organization and Personnel. The Bureau of Mines, as now organized, includes twelve Divisions, as follows:

Fuels Division
Petroleum Division
Division of Mining Experiment Stations
Division of Metallurgy
Division of Mineral Technology
Mining Research Division
Safety Service
Chief Surgeon
Chief Explosives Chemist
Division of Office Administration
Information Service

There are now twenty-one mine-safety stations, eleven of which are movable cars. The headquarters for these activities is Pittsburgh, Pennsylvania.

The present Director of the Bureau is Scott Turner, appointed in 1925 to succeed H. Foster Bain, who was appointed on January 1, 1921, succeeding F. G. Cottrell, who had served from June 7, 1920, up to that time. The first Director of the Bureau was Dr. Joseph A. Holmes, appointed July 1, 1910, after previously having had charge of the work under the Geological Survey. On his death, on July 3, 1915, he was succeeded by Van H. Manning, who resigned on June 7, 1920.

The present Chief Surgeon is Dr. R. R. Sayers, who was detailed to the Bureau of Mines by the Public Health Service on February 4, 1920, and has served since that date. The Safety Service Director is T. T. Read.

The personnel of the Bureau is shown by year below:

1911	298	1918	648
1912	304	1919	785
1913	391	1920	738
1914	426	1921	772
1915	418	1922	667
1916	430	1923	709
1917	550	1924	767

Of the number employed in 1925, one hundred were concerned directly and three hundred indirectly with health and safety work. Some of the personnel detailed from other departments or from coöperating agencies are also employed upon health and safety work.

Publications. The publications of the Bureau consist of Bulletins, Technical Papers, Miners' Circulars, and various miscellaneous types of pamphlets. Most of the twenty-seven Miners' Circulars are on the subject of accident prevention or health conservation, and many of the bulletins and technical papers also deal with these subjects. In addition to the references given in this report, the following selected pamphlets of the bureau may be mentioned:

Bulletin 132. Siliceous dust in relation to pulmonary disease among miners in the Joplin District, Missouri. By Edwin Higgins, A. J. Lanza, F. B. Laney, and George S. Rice.

Bulletin 139. Control of hookworm infection at the deep gold mines of the Mother Lode, California. By J. G. Cumming and J. H. White.

Bulletin 204. Underground ventilation at Butte. By D. Harrington.

Bulletin 225. Stone dusting or rock dusting to prevent coal-dust explosions, as practiced in Great Britain and France. By G. S. Rice.

Technical Paper 260. Miners' consumption in the mines of Butte, Montana. By D. Harrington and A. J. Lanza.

Technical Paper 285. Compressed-air illness and its engineering importance. By E. Levy.

Technical Paper 324. The sanitation of oil-shale camps. By A. L. Murray.

Technical Paper 372. Silicosis among miners. By R. R. Sayers.

Technical Paper 375. Safety and Health in the Mines of Butte, Montana. By G. S. Rice and R. R. Sayers (in Press).

Miners' Circular 20. How a miner can avoid some dangerous diseases. By A. J. Lanza and J. H. White.

Miners' Circular 28. Sanitation in mines. By R. R. Sayers.
Manual of First Aid Instruction for Miners (Revised). By R. R. Sayers.

Appropriations. Appropriations for all purposes of the Bureau have been as follows:

1911	$ 502,200	1919	$3,245,285
1912	475,500	1920	1,216,897
1913	585,100	1921	1,362,642
1914	662,293	1922	1,439,300
1915	730,500	1923	1,580,900
1916	757,300	1924	1,900,468
1917	981,060	1925	1,900,468
1918	1,467,070	1926	1,971,560

About $50,000 is spent on health work and about $400,000 is spent on health and safety work combined.

The Bureau of Fisheries. The Bureau of Fisheries of the Department of Commerce is concerned chiefly with the economic aspects of fisheries, though some of its activities have an indirect bearing on public health. The functions of the Bureau comprise: (1) The propagation of useful food fishes and their distribution to suitable waters; (2) inquiry into causes of decrease of food fishes in lakes, rivers, and coastal waters, studies of fish culture, and determination of food resources; (3) investigations of methods of fisheries and the preservation and utilization of fisheries products; (4) administration of the salmon fisheries in Alaska, the fur-seal herd on the Pribilof Islands, and the care of the natives of those islands; and (5) administration of the law for the protection of the sponges off the coast of Florida, in coöperation with the Coast Guard.

The total appropriation to the Bureau for the fiscal year 1925 was $1,319,335. Of this sum, $386,250 was for the propagation of food fishes, $38,170 for an inquiry respecting food fishes, and $10,000 for a reserve supply of food, medicines and clothing for the people of the Pribilof Islands.

The importance of fish in human nutrition is indicated by the following quotation from a recent report of the Secretary of Commerce: [14] "Marine foods have certain health properties of impor-

[14] Secretary of Commerce, 1924, p. 159, Annual Report.

tance and interest to the dietitian and the general public when accurately determined and adequately understood. For example, investigations conducted in the fishery products laboratory of the Bureau have proven that sea foods are unusually rich in iodine, some shellfish having two hundred times as much iodine and most marine fish fifty times as much iodine as ordinary foods. Marine animals and the oils of fish have certain constituents, such as vitamins, which are of unusual advantage in promoting good health. For example, cod-liver oil contains an abundance of the antirachitic vitamin and oysters of the antiscurvy vitamin. The Bureau is coöperating with investigators in examining these questions more closely."

Many investigations of oysters [15] and other shellfish have been made, including studies of their pollution. The digestibility of fish has been investigated, in coöperation with the Office (now Bureau) of Home Economics of the Department of Agriculture,[16] and various bulletins have been issued by the Bureau of Fisheries on fish as food.[17]

Experiments on the use of fish in the control of mosquitoes have been conducted by the bureau for several years at Augusta, Georgia, in coöperation with the Public Health Service and the local board of health.[18]

Fisheries activities by the National Government date from 1871, when a Fish commission was created by a joint resolution of Congress. The supervision of Alaskan fisheries had been conferred upon the Secretary of the Treasury in 1868. In 1903 the Fish Commission was transferred to the Department of Commerce

[15] See Oysters, a little of their history and how to cook them. By H. F. Moore. Economic Circular 18. Revised 1918.

[16] Experiments on the digestibility of fish. By A. D. Holmes. Department of Agriculture, Bulletin 649 (1918).

[17] See Selected list of government publications on food and nutrition. Bureau of Home Economics (1925).

See especially: Oysters, an important food. By Lewis Radcliffe. Economic Circular 58 (1925).

[18] Use of fishes for control of mosquitoes in Northern fresh waters of the United States. By J. Percy Moore. 62 pp. Doc. 923 (1922).

Fishes in relation to mosquito control in ponds. By Samuel F. Hildebrand. Doc. 874 (1918).

Fishes destructive to eggs and larvæ of mosquitoes. By Lewis Radcliffe. Economic Circular 17 (1915).

and Labor, where it became a bureau. The work of the Alaskan Fisheries Division also was taken over into this new department in 1903, and in 1905 its duties were assumed by the Bureau of Fisheries.

The Bureau of Standards.[19] The Bureau of Standards of the Department of Commerce may be characterized as the great physical, chemical, mechanical, metallurgical, and general laboratory of the government. Its functions, in the words of its Director, "comprise the development, construction, custody, and maintenance of reference and working standards, and their inter-comparison, improvement, and application in science, engineering, industry, and commerce." Among the vast and varied activities of the bureau are several which have some bearing on the public health. They represent, of course, only a very small fraction of the total work of this Bureau, which was established only twenty-five years ago (in 1901), but has grown so rapidly in scope and function that it is to-day one of the most important branches of the government.

Current Activities. For over ten years the Bureau has been concerned with problems of accident prevention. "It is endeavoring to promote safe, efficient, and economical practice in the operation of utility companies, and reasonable uniformity in the technical requirements of state and local commissions which control such companies. This work, which has very greatly expanded since its beginning, consists of the preparation and revision of safety standards; study of technical problems in traffic control; investigation of accidents and of conditions and practices in industry; and preparation of publications bearing on the application of safety standards."[20]

The bureau has assisted and, in fact, been responsible for the preparation of a number of standard safety codes. These codes are presented to the American Engineering Standards Committee, through the Safety Code Correlating Committee, upon which the bureau is represented. The bureau has sponsored the following: electrical safety code; gas safety code (with American Gas Asso-

[19] Weber, The Bureau of Standards. Institute for Government Research, Service Monograph No. 35 (1925).

[20] *Ibid.*, p. 111.

ciation); code for the protection of the heads and eyes of industrial workers; combined electrical fire and safety code; code for protection against lightning (with American Institute of Electrical Engineers); safety code for logging and sawmill operations; safety code for aeronautics (with the Society of Automotive Engineers); code for the colors of traffic signals (with National Safety Council); and safety code for elevators (with American Society of Mechanical Engineers and American Institute of Architects). The Bureau of Labor Statistics of the Department of Labor has also been concerned with certain other safety codes under similar auspices,[21] while the Public Health Service was in 1925 working on an industrial hygiene code for presentation to the American Engineering Standards Committee.

In the field of radiometry, the bureau has made an investigation for the Public Health Service on the radiation characteristics of quartz mercury vapor lamps used for therapeutic purposes; it has also coöperated with the research department of the Public Health Service in determining the kind and extent of the effects of the radiation from radioactive materials on members of the staff of the Bureau who handle them. Studies on the X-ray have likewise been made.

In connection with its Building and Housing Service, the bureau has had a committee at work on a standard plumbing code. This committee, comprised of sanitary engineers and plumbing experts, issued a comprehensive report in 1924.[22] A zoning committee formulated in 1923 a standard state zoning enabling act.

Organization. The Bureau of Standards has a personnel of over seven hundred persons, who are employed in fourteen divisions, organized into sixty-six sections. The annual appropriations are now nearly two million dollars. In 1925 the sum was $1,775,760.

The Patent Office.[23] The administration of the Federal laws dealing with patents, trademarks, prints, and labels is entrusted

[21] See page 263.

[22] Recommended minimum requirements for plumbing in dwellings and similar buildings. Bureau of Standards. 1924.

[23] See Weber, The Patent Office. Institute for Government Research, Service Monograph No. 31 (1924).

to the Commissioner of Patents, who is chief executive of the Patent Office of the Department of Commerce, to which it was transferred from the Department of the Interior by Executive Order in 1925. The only way in which the Patent Office touches upon the subject of public health is in its issuance of patents or trademarks for drugs, chemicals, and other preparations used as medicines, cosmetics, or for similar purposes. This, however, has been in the past, and still is, a matter of some importance.

The Constitution mentions the granting of patents as one of the functions of the national government. Soon after the First Congress assembled, a bill to enact a patent law was introduced, and an act to this effect was finally passed on April 10, 1790 (1 Stat. L., 109). Since that time numerous other laws on the subject have been enacted. Patent laws were administered by the Secretary of State until 1836, when a separate Patent Office was created within the State Department. It was transferred to the Department of the Interior in 1849, when that Department was created, and in 1925, it became a part of the Department of Commerce.

At the present time nearly one hundred thousand applications for patents and trademarks are received annually. In 1923, 56,021 patents and registrations were granted. The business of the Patent Office is further augmented by litigated cases and miscellaneous transactions, such as supplying copies of records, etc. About a million and a half patents have been granted in this country since 1790.

The work of examining applications for mechanical patents is distributed among forty-nine divisions, each in charge of a principal examiner, who is assisted by a corps of assistant examiners and clerks. Each division has jurisdiction over a group of supposedly related subjects. Those which touch directly or indirectly upon the field of public health include the following divisions:

6. *Chemicals,* dyeing, explosives, paints, plastic compositions.
20. Closure fasteners, undertaking, artificial body members, locks and latches, *dentistry.*
31. *Industrial chemistry,* fuel.
35. Buckles, buttons, cards, signs, signals, *toilet.*
43. *Sanitary engineering, surgery,* fire extinguishers.

Before a patent is issued, it must be proven that:

1. The alleged invention is in fact new.
2. It is useful.
3. It is an invention.
4. It has not been known or used by others in this country before the date of the alleged invention.
5. The invention has not been abandoned.
6. It has not been patented or described in any printed publication in this or any foreign country before the date of the alleged invention or more than two years prior to the date of the domestic application.
7. It has not been in public use or on sale in this country more than two years prior to the domestic application.
8. There is a complete and accurate disclosure of the alleged invention and a distinct definition of the subject matter claimed to have been invented.

Patents, except for design, are granted for a term of seventeen years.

In past years many patents have been issued for medicines. The patent, of course, is no guarantee of the efficacy of the remedy. At present the procedure of manufacturers of medical products is usually to register the name as a trade-mark, which is a "distinctive word, emblem, symbol, or device, or a combination of these, used on goods actually sold in commerce to indicate or identify the manufacturers or seller of the goods." Prints and labels may also be registered. The Department of Agriculture has an arrangement with the Patent Office to the effect that no application for registration of a trade-mark for a meat product will be favorably acted upon by the Patent Office unless stamped "approved" by the Bureau of Animal Industry. There is no reason why there should not be a similar arrangement between the Patent Office, on the one hand, and the Bureau of Chemistry and the Public Health Service, on the other, with respect to medical preparations.

The Commissioner of Patents has established a number of classes of merchandise for the purpose of registration. Among them are:

6. Chemicals, medicines, and pharmaceutical preparations.
44. Dental, medical and surgical appliances.
46. Foods and ingredients of foods.

The Steamboat Inspection Service.[24] The Steamboat Inspection Service of the Department of Commerce is charged with the duty of administering the laws enacted for safeguarding the lives of passengers and crews of vessels engaged in marine transportation. It inspects hulls, machinery, and equipment of vessels of the merchant marine of the United States; licenses officers and certifies crews of such vessels; and conducts investigations to ascertain violations of rules and regulations. These activities date from 1838, when the first act (5 Stat. L., 304) for the security of passengers was passed, though the Service itself was not organized until 1852 (10 Stat. L., 61), when it was attached to the Treasury Department. A Supervising Inspector-General was provided for in 1871 (16 Stat. L., 440), and in 1903, the Service was transferred to the Department of Commerce and Labor (32 Stat. L., 825). Much other legislation regarding marine safety was also passed from time to time.

Since most of the work of the service is concerned with life and safety, it obviously has some bearing on the public health, though by no means would this bureau be classed as a health agency. Besides inspections to insure general safety, the service, under the Seaman's Act of 1915 (38 Stat. L., 1164), sees to it that vessels provide suitable sleeping quarters, toilets, washing places, and hospital facilities for their crews. It also regulates the transportation of dangerous articles, such as explosives and acids, on vessels.

The Public Health Service coöperates with the Steamboat Inspection Service by making physical examinations of applicants for licenses as master, mate, pilot, or engineer, and also conducts classes in first-aid for officers and crews of vessels. Sanitary engineers of the Public Health Service have likewise been active in securing pure water supplies for vessels.[25] Customs officers are charged with inspection of sanitary conditions of vessels entering ports with steerage passengers (22 Stat. L., 186, as amended, 33 Stat. L., 711, and 35 Stat. L., 583), reporting on such conditions to the Secretary of Commerce.

[24] See Short, The Steamboat Inspection Service. Institute for Government Research, Service Monograph No. 8 (1922).

[25] See Connelly, J. I., The supplying of drinking water to vessels in the United States. Public Health Service, Public Health Reports, May 22, 1925.

CHAPTER XII

THE DEPARTMENTS OF STATE, JUSTICE, AND THE POST OFFICE

Each of the Departments of State, Justice, and the Post Office carry on some work which is of indirect importance to national vitality. The Consular Service of the State Department has certain duties with respect to foreign quarantine, though the consuls are often assisted by officers of the Public Health Service detailed for the purpose. The Department of Justice conducts the prosecutions for violations of the Pure Food and Drugs Act and other Federal laws pertaining to health, while the Superintendent of Prisons of this Department is charged with giving proper medical care to Federal prisoners. The Post Office Department issues fraud orders against deleterious and fraudulent drugs or medicines using the mails. The Service Relations Division of this Department endeavors to improve the physical welfare of postal employees.

The Consular Service. The Consular officers, under the jurisdiction of the Department of State, are required to issue bills of health to vessels clearing for ports in this country, after satisfying themselves that such vessels are in proper sanitary condition, and they must also report weekly to the Secretary of the Treasury regarding the sanitary conditions of the ports at which they are stationed. The first legislation on this subject was the act of April 29, 1878 (20 Stat. L., 37), which provided that consular officers in foreign countries should advise the Supervising Surgeon General of the Marine Hospital Service of the prevalence of contagious diseases in any foreign port or the departure of any vessel from such a port for the United States. Subsequent legislation to the same or similar effect was passed in 1879 (21 Stat. L., 5) and in 1893 (27 Stat. L., 449), the latter law being still in operation. The act of 1893 authorized the President to detail medical officers to serve in the office of any consul to assist in this work. Accordingly, officers of the Public Health Service

have been assigned to about forty foreign ports. Regulations governing sanitary conditions of vessels are made under the supervision of the Secretary of the Treasury, and the President is given the power to "prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate and for such period of time as he may deem necessary." The inspection of immigrants at foreign ports was actually commenced in 1899, when an assistant surgeon was sent to Naples. During the fiscal year 1924, about a half a million passengers were inspected in Europe on more than two thousand vessels. The medical officers were also called upon by consuls to examine sick American seamen, to make physical examinations of war veterans, pensioners, and seamen, and to advise the consuls on all medical and public health questions.

The Superintendent of Prisons. The Superintendent of Prisons, attached to the Division of Taxation, Prohibition, and Prisons of the Department of Justice, has charge of the health and medical care of all Federal prisoners. On June 30, 1925, there were 8518 such prisoners confined in the United States penitentiaries at Atlanta, Georgia; Leavenworth, Kansas; McNeill Island, Washington; the National Training School for Boys, the National Training School for Girls, and in state institutions other than county jails. Physicians, nurses, and dentists are employed at all of these institutions. Hospitals are maintained at Leavenworth and Atlanta, and construction of a hospital was begun in 1925 at McNeill Island.

The Post Office Department. The Post Office Department is charged with the enforcement and administration of the postal laws, a duty which since 1775 has been under the supervision of a Postmaster General.

The postal laws prohibit, among other things, the transmission through the mails, of poisons, explosives, disease germs, and other dangerous articles (35 Stat. L., 1131), except under such rules and regulations as may be made by the Postmaster General. Obscene matters, articles used for abortion, and contraceptive material and information are also debarred. Fraudulent and spurious articles are unmailable; and advertising for such purposes is prohibited through the mails.

These offenses against the postal service include the transmission through the mails, of patent medicines and other drugs and preparations which are fraudulent or dangerous to health.[1] It is sometimes more practical to deal with such articles under the postal laws than under the Pure Food and Drugs Act.[2] When evidence is collected by inspectors showing that an organization or person is using the mails to promote improper medical schemes the Postmaster General, after a hearing, may issue a fraud order denying the use of the mails, or the firm or person responsible may be prosecuted under the penal laws. A fraud order is not always issued; for an opportunity is sometimes given to the offender to discontinue or amend his practices. The Bureau of Chemistry makes many analyses for the Post Office Department.

The Division of Service Relations. The Division of Service Relations endeavors, through the medium of national, county, local, and departmental councils, to improve the working conditions of the postal employees and to bring about closer coöperation and better understanding among the public, the officers, and the employees. One of its objectives is the promotion of measures for physical health.

History and Development. A Welfare Division was organized by Postmaster General Hays in June, 1921, and Dr. Lee K. Frankel was appointed as Director, without salary. A national council, consisting of two representatives of each of the ten postal employees' organizations, was immediately formed and has held monthly meetings ever since. A departmental council was also created and a plan of constitution for local councils was adopted in October, 1921, and one for county councils, in May, 1922. The plan of constitution was slightly changed in April, 1923.

A survey of post office buildings in Washington, D. C., was made in 1921, and the Director also made a personal inspection of the larger post offices throughout the country. A questionnaire, containing more than two hundred questions relating to working conditions, was sent to all first and second-class post offices, and the information was tabulated in December of 1921 and thereafter. This study indicated nearly six thousand complaints of conditions

[1] See Kebler, L. F., Public health conserved through postal laws, *American Journal of Public Health,* August, 1922.

[2] See page 190.

in about 3500 buildings, nearly one thousand of which were owned by the United States and the remainder leased. More than two thirds of these cases have now been remedied, according to the Division.

Physical examinations of one hundred employees were made by the Life Extension Institute in 1921, and in the following year the Public Health Service made examinations of one thousand employees in the New York and Chicago offices. Since 1923 the Public Health Service, and since January, 1925, other Federal agencies, have offered such physical examinations at seventy-eight stations throughout the Service. To September 30, 1925, 8267 postal employees had availed themselves of the privilege, which is entirely voluntary. Free vaccination against smallpox, typhoid fever, and para-typhoid is also extended at all their stations by the Public Health Service.

The Public Health Service has further coöperated with the division by making an intensive survey of lighting and illumination in the post office in New York City and also at the City Hall Station,[8] and in testing the eyes of 2500 persons. The information contained in this survey was to serve as a basis for new lighting and for correcting the lighting systems in the different post office buildings throughout the country, in so far as appropriations would permit. A summary of the survey report was published in pamphlet form and forwarded, with a letter from the Postmaster General, to all first, second, and third-class post offices, and to all post office inspectors. As a consequence of the findings of this investigation and the recommendations contained in the report, and of further studies made by lighting experts of the Post Office Department, Treasury Department, and the Public Health Service, the most modern standard of lighting affecting post office work was adopted, and is now being stipulated by the Department when new leases are executed. The Treasury Department is installing modern lighting in new construction work and where additions and alterations are being made.

First-aid instructions have been prepared in pamphlet form by the Public Health Service and made available to all postal employees. First-aid kits have been furnished all post offices, stations,

[8] Studies in illumination. Public Health Service, Public Health Bulletin No. 140.

and terminals having twenty-five or more employees. Large chests were sent to 115 of the largest offices, and a complete unit was sent to 1800 smaller offices. These kits are replenished as needed. The kits, chests, and supplies for replenishment were obtained from the surplus war material, without expense to the Department. There was available in 1925, sufficient stock, with a few exceptions, for two years' replenishment.

At the suggestion of the Postmaster General, the Public Health Service placed a dispensary in the main post office in New York City, and located its principal dispensary in Washington in the Post Office Department building.

Dr. Frankel was succeeded as Director by Mr. Henry S. Dennison, whose appointment was announced on April 1, 1922. The name of the Division was changed from "Welfare" to Service Relations on January 1, 1923.

Current Activities. In its efforts to improve the health, comfort, and working conditions of postal employees, the Service Relations Division engages in many activities. Much of the work is educational, and bulletin letters are sent out to be posted conspicuously. To the local councils they have been sent monthly since 1923, while to county service councils quarterly since 1924.

Among the accomplishments and current activities of the division and through the councils may be cited: the betterment of "swing room" conditions, the movement for rest rooms for women, which the Department has provided in most of the larger post offices; coöperation with postal officers in proper mailing, mail-early campaigns, and other improvements in postal service.

The need of rest bars for distributing clerks, who stand four or more hours a day, was studied and considered. Under the direction of the First Assistant Postmaster General, investigations and tests were made in ten of the larger offices to determine the advantages and disadvantages and the best general type. Based on these tests the First Assistant Postmaster General decided to initiate an improved program, and a standard type was adopted for leased buildings and the same standard was recommended to the Treasury Department for adoption for use in Federal buildings. Such bars under certain regulations have been installed in leased buildings and in most of the Federal buildings, and further installations

are being made when needs are brought to the attention of the Department, in so far as appropriations will permit.

In coöperation with the National Association of Letter Carriers, a large shoe manufacturer was interested in constructing a shoe specially adapted to the needs of the letter carriers. This shoe was approved by the Public Health Service as to shape, fit, and comfort; by the Bureau of Standards as to quality of material: and by the National Boot and Shoe Manufacturers Association as to workmanship, and can now be secured at a reasonable cost.

Among other activities may be mentioned: a study of the dust hazards in handling quantities of mail bags, made with the coöperation of the Public Health Service; study of a new type of shoulder strap for letter carriers; survey of congestion in work rooms of post offices; study of carbon monoxide poison in post office garages, again with the coöperation of the Public Health Service; promotion of coöperative cafeterias; and various activities concerned with the improvement of the economic conditions of employees.

Organization. The Service Relations Division consists of a part-time Director, a full-time associate, an assistant, and a clerk. The division comes under the direct supervision of the Postmaster General.

In addition to the national service relations council, and the Departmental council, the latter representing the 2600 postal employees in the departmental service in Washington, there are 807 active local councils and 330 active county councils. These various councils represent approximately 150,000 employees.

CHAPTER XIII

THE DEPARTMENTS OF WAR AND THE NAVY

The Army and Navy each has its medical establishment, which is, of course, concerned primarily with caring for the health of its own personnel, or of providing soldiers and sailors with medical relief when necessary. Although such services are of special scope, and naturally would not be considered as elements in any plan for correlation of federal health agencies, a description of each is desirable. Much of the work of these medical agencies has a distinct influence on civilian health.

Besides its operations through the medical establishment, the War Department does certain other work of interest to public health. The Chemical Warfare Service, for instance, has studied the possibility of utilizing chlorine in the cure or alleviation of respiratory diseases—investigations which have been made by an officer detailed from the Medical Department.

The Secretary of War, who has jurisdiction over navigable waters of the United States, is charged with the enforcement of the Oil Pollution Act of 1924 (43 Stat. L., 604), which prohibits pollution by oil of the coastal navigation of the United States. The Secretary also controls the withdrawal of water from navigable streams or lakes for purposes of sewage disposal or water supply. This right was emphasized in a recent decision of the United States Supreme Court in which the Sanitary District of Chicago was enjoined from using more water from the Great Lakes than the Secretary would permit.[1] These duties are usually exercised through the Chief of Engineers.[2]

The Quartermaster General has charge of the construction of water supplies and waste disposal systems for military use.

[1] Sanitary District of Chicago *vs.* U. S., 266 U. S. 405 (1925).

[2] See Holt, The Office of Chief of Engineers. Institute for Government Research, Service Monograph No. 27 (1923).

The Medical Department of the Army. The Medical Department is charged with the prevention of disease and care of the health of the United States Army and other persons under military control; the making of physical examinations of officers and enlisted men; the care and transportation of the sick and wounded; the administration of military hospitals; and the supervision of the component organizations, the Medical Corps, the Army Nurse Corps, the Veterinary Corps, and the Medical Administrative Corps. The Surgeon General is the adviser of the War Department upon all medical and sanitary affairs of the Army.

History and Development. The medical history of the United States Army is a subject upon which many volumes could be and, in fact, have been written. Five volumes, for instance, are devoted to the War of the Rebellion, while fifteen are estimated as necessary for the World War. Ten of the latter have already been prepared, the work having been progressing steadily since the close of the war in 1918. It will require several years yet for it to be completed. Naturally, therefore, nothing can be presented here except the barest outline of some of the historical aspects of the development of administrative features of the Medical Department.

The establishment of an army hospital was agreed upon as early as July 27, 1775, by the Continental Congress. An act of May 28, 1798 (1 Stat. L., 559), authorized the President to appoint a physician general for the Army, though he was never called into service. In 1799 Congress passed a law (1 Stat. L., 721) to regulate the medical establishment, which provided for a physician general, an apothecary general, a purveyor, and other personnel. The office of Surgeon General was not created until 1818 (3 Stat. L., 426), this law repealing the earlier one, and giving the Medical Department a permanent chief. The office of Apothecary General was omitted in 1821 (3 Stat. L., 615), this act also reducing the personnel of the entire service.

The Medical Department served with distinction during the war with Mexico from 1846 to 1848. At the beginning of the Civil War in 1861, the corps consisted of 115 medical officers, twenty-four of whom resigned to join the Confederate cause. During this war the medical service cared for more than a million sick, though, of course, the size of the corps had been greatly increased. One of the notable steps was the establishment in 1862 of the Army Medical

Museum, which, together with the Surgeon General's Library, has increased in scope to the present day.

The Army Medical School was organized in 1893 at Washington, D. C. From this school and the office of the Surgeon General, was organized in 1898 the famous Yellow Fever Commission. The rest of that story is well known in history, as is the narrative of the practical application of the scientific facts developed by Walter Reed and his associates, in the conquest of yellow fever in Havana and Panama under the direction of William C. Gorgas. At the outset of the war with Spain, the medical establishment consisted of 177 officers and 750 enlisted men. Disease played a conspicuous part in this war, and the sanitary experiences were extremely instructive. One of the achievements was the epidemiological study by Walter Reed, V. C. Vaughan, and E. O. Shakespeare on typhoid fever, which demonstrated the modes of infections of this disease. Preventive inoculation against typhoid was developed in 1907 and succeeding years by F. F. Russell, with the result that today typhoid in the military establishment is practically extinct.

A Nurse Corps was created in 1901 (31 Stat. L., 753), a Dental Corps in 1901 (31 Stat. L., 752), and the Veterinary Service was incorporated in the Medical Department in 1916 (39 Stat. L., 176). The World War, in which the United States first participated in 1917, brought with it a tremendous increase in the duties and scope of the Department. More than three and a half million men between the ages of 18 and 30 were examined for military service by draft boards. The results of these examinations, which were summarized in 1920 by officers of the Medical Department, revealed a surprisingly large amount of physical deficiency in the male population of the country.

One of the outstanding events since the war has been the establishment and progressive development of the Army Medical Center at Washington. This center was created on September 1, 1923, in accordance with General Orders No. 33, W. D. In this year, and about the same time, the Army Medical School moved to the center and occupied its own home for the first time in its existence.

Current Activities. The United States Army has an authorized enlisted strength of 125,000, though the actual strength is several thousand less. The soldiers are distributed in nine corps areas in the United States, and at foreign stations in the Philippines,

Hawaii, Panama, Alaska, China, and Porto Rico. In addition there are about 12,000 commissioned officers.

It is the function of the Medical Department to maintain the health of these military forces. "This is accomplished by the selection and enrolment for military service, through properly conducted physical examinations, of only those men physically fit for the performance of the duties to devolve upon them, by keeping such personnel in good physical condition through the application of modern principles of preventive medicine, and in furnishing those who do become disabled with such aid in the form of evacuation and hospitalization facilities as will speedily restore them to health and fighting efficiency."[3]

Organization. At the head of the Medical Department is a Surgeon General with the rank of Major General. The present incumbent is Major General M. W. Ireland, who succeeded Major General W. C. Gorgas in this position. The Surgeon General's office at the War Department has the following divisions: Professional Division; Administrative Division; Dental Division; Veterinary Division; Personnel Division; Vital Statistics Division; Finance and Supply Division; Library; and Plans and Training Division. For administrative purposes the Army is divided into nine corps areas, with headquarters at Boston; Governor's Island, N. Y.; Baltimore; Washington; Atlanta; Fort Hayes, Ohio; Chicago; Omaha; Fort Sam Houston; and the Presidio at San Francisco. At each of these headquarters a corps area surgeon is stationed.

The Army Medical Library, commonly known as the library of the Surgeon General's office, is the largest medical library in the world, comprising nearly a million books and pamphlets. It is located in the same building as the Army Medical Museum near the Smithsonian Institution, and is consulted by many physicians and sanitarians not members of the Army.

In addition to the officers and enlisted men, the Medical Department has over 1600 civilian employees.

The Medical Corps. The authorized strength of the Medical Corps, consisting exclusively of medical officers, is 985, though there were about fifty vacancies in 1924. Shortly after a newly

[3] Army regulations, No. 40-5 (1924).

appointed officer in the Corps receives his commission, he is sent to the Army Medical School at Washington, and to the Medical Field Service School at Carlisle, Pennsylvania, for special training. The subjects taught at these schools are bacteriology, pathology, hygiene and preventive medicine, Medical Department administration, military surgery, clinical medicine, sanitary chemistry, ophthalmology, roentgenology, sanitary tactics, tropical medicine, psychiatry, military law, and equitation.[4]

The duties of a medical officer are: (1) Professional, those incidental to the practice of medicine including the making of physical examinations; (2) advisory, those pertaining to a medical officer as a staff officer; and (3) administrative, those pertaining to a commander of Medical Department personnel and establishments and the patients therein. A medical staff officer is normally assigned to each command larger than a company. A medical officer who has had special training in the School of Aviation Medicine and is properly qualified, is known as a flight surgeon and is assigned to the air service. This school was recognized by the War Department as a special service school in 1921.

The Dental Corps. The authorized strength of the Dental Corps is 158 officers, being in the relation of one to one thousand total strength of the Army, a ratio which is considered inadequate. An Army Dental School has been maintained since 1921, and is now located at the Army Medical Center in Washington.

The Army Nurse Corps. The strength of the Army Nurse Corps on June 30, 1924, included 468 regular and 207 reserves. The nurses rank as commissioned officers. An Army School of Nursing was created in 1918 and now forms part of the Army Medical Center.

The Veterinary Corps. The authorized commissioned personnel of the Veterinary Corps is 126. This Corps also has a school of instruction, known as the Army Veterinary School, which was moved from Chicago to Washington in 1923, and forms part of the Army Medical Center. The Corps not only has charge of the health of animals, but it is also responsible for meat and dairy hygiene.

[4] See Circular of Information for Appointment, Form 132 (1925), Surgeon General's Office.

Enlisted Personnel. There are nearly seven thousand enlisted men in the Medical Department, holding grades from private to master sergeant.

Reserves. The number of officers in the Medical Reserve Corps in 1924 was 7459. In addition, there were 3055 dentists, 865 veterinarians, 416 officers in the Sanitary Reserve Corps, and 880 in the Medical Administrative Reserve Corps. Reserve officers training corps units are in operation at twenty-four medical, eight dental, and four veterinary institutions.

Medical Administrative Corps. The Medical Administrative Corps, with an authorized strength of seventy-two officers, is made up of non-medical personnel, who are assigned to various administrative duties.

The National Guard. The National Guard of the various states has a federal status by virtue of official recognition from the government. In 1924 there were 950 commissioned medical officers in the National Guard, and 8459 enlisted men.

Hospitals. The number of patients admitted to army hospitals during 1924, was 84,976, including 6324 beneficiaries of the Veterans' Bureau.[5] General hospitals are maintained as follows: Walter Reed, Washington; Letterman, Presidio, San Francisco; Fitzsimmons, Denver; Army and Navy General, Hot Springs, Arkansas; William Beaumont, El Paso; Sternberg, Manila; and Tripler, Hawaii. There are also 108 station hospitals throughout the country and six in the Insular possessions.

Appropriations. The annual appropriation to the Medical Department is nearly a million and a half dollars. For 1925, $1,272,914 was appropriated, though the sum estimated for 1926 was somewhat greater.

The Bureau of Medicine and Surgery of the Navy. The Bureau of Medicine and Surgery of the Navy has charge of all matters pertaining to the health of the personnel of the United States Navy. The Navy consists not only of ships, but of navy yards, training stations, and hospitals, and the Department of the Navy acts as the governing agent for certain of the island possessions, such as Guam, Samoa, and the Virgin Islands. The Bureau of Medicine and Surgery has charge of the upkeep and operation of all hospitals;

[5] Surgeon General, Annual Report, 1924, p. 14.

advises with respect to all matters of hygiene and sanitation; makes physical examinations of officers and enlisted men; has jurisdiction over all the personnel of the Medical Corps, Dental Corps, Hospital Corps, and Nurse Corps; and cares for the sick and wounded in time of battle.

History and Development. To outline in detail the medical history of the Navy would obviously require much space, and only certain significant events will be mentioned. As early as 1799 Congress passed a law extending relief for sick and disabled seamen of the Navy (1 Stat. L., 729). Naval hospitals were placed under the supervision of a board of commissioners in 1811 (2 Stat. L., 650), but transferred to the Secretary of the Navy in 1832 (4 Stat. L., 572). An act for the better organization of the medical department of the Navy, passed in 1828 (4 Stat. L., 313), authorized the appointment of assistant surgeons, although the Bureau of Medicine and Surgery itself was not created until 1842 (5 Stat. L., 579). Various other laws relating to the medical service of the Navy have been passed since that time.[6] The Hospital Corps was established in 1898 (30 Stat. L., 474), the Nurse Corps in 1908 (35 Stat. L., 146), and the Dental Corps in 1912 (37 Stat. L., 903). The Naval Medical School was organized by General Order No. 89 of the Navy Department in 1902.

Current Activities. The average daily strength of the Navy is somewhat over 116,000, including commissioned officers, warrant officers, enlisted men, midshipmen, and nurses. Of this number about 19,500 make up the Marine Corps. The average daily number on the sick list for the entire Navy is about four thousand. The force afloat, or the United States Fleet, with a strength of about sixty thousand, consists of the Battle Fleet in the Pacific, the Scouting Fleet in the Atlantic, the Asiatic Fleet, the naval forces in Europe, the special-service squadron, the naval transportation service, and ships on special duty. A modern battleship, with a complement of over one thousand officers and men, is a community in itself, presenting health problems involving sanitation, hygiene, disease control, food, ventilation, and many other matters.

The Bureau of Medicine and Surgery is charged with inspecting the sanitary condition of the Navy and making recommendations

[6] See Manual of the Medical Department of the United States Navy.

concerning it; with advising the Department and other bureaus with reference to the sanitary features of ships under construction and in commission; and with caring for the health of the entire personnel. Its jurisdiction in this regard includes the ships of war and the shore stations, which comprise navy yards at Portsmouth, New Hampshire; Boston; New York; Philadelphia; Washington; Norfolk; Charleston; Key West; New Orleans; Mare Island, California; and Puget Sound. There are also submarine bases, naval air stations, marine barracks, and receiving ships in different parts of the country, which is divided into thirteen naval districts for administrative purposes.

Various educational courses are given by the bureau to officers of the Medical Department and also to the hospital corps. In 1924, some four hundred members received instruction, not including hospital corpsmen who were trained at various stations. These courses have been given chiefly at the Naval Medical School, where there are laboratories and other facilities. A Dental School is also maintained there.

The bureau publishes monthly the Naval Medical Bulletin, a professional magazine first issued in 1907. Many of the articles are of interest to sanitarians as well as to practitioners of medicine.

No person may be appointed to the navy or marine corps until he has passed a rigid physical examination, which is made by officers of the Medical Corps.[7] In addition, annual physical or health examinations are made of officers, nearly nine thousand having been examined in January, 1924. Of this number, 1127, or 12.6 per cent, were found to have physical defects worth mention in the reports. Compared with findings from examinations made in civil life, this is a remarkably good record. Physical examinations are also given prior to promotions.

Organization. At the head of the Bureau of Medicine and Surgery is a Surgeon General with the rank of Rear Admiral. The present incumbent is Dr. E. R. Stitt.

The Medical Corps. The Medical Corps has an authorized strength of 0.65 per cent of the total personnel of the Navy. In 1925 the number of medical officers averaged 785. Practice of medicine in the Navy does not differ materially from practice in

[7] See Physical Examinations and Requirements. Reprint of Chapter 11 of the Manual of the Medical Department (1922).

civil life,[8] except, perhaps, that the Navy medical officer acquires more knowledge of preventive medicine than the average practitioner. Recently the plan has been adopted of accepting qualified graduates of Class A medical schools, giving them commissions as lieutenant, junior grade, and placing them as internes in the large naval hospitals. Thus, they receive pay while serving their interneship, whereas in civil life interneship carries no remuneration with it. After completion of this interneship, or following the appointment from civil life of licensed physicians, and after a tour of hospital duty, new medical officers receive special instructions at the Naval Medical School at Washington. They are then ordered to sea duty, or sometimes to a foreign station. After this comes a tour of shore duty at one of the naval hospitals.

Hospitals. The naval hospitals are located at Portsmouth, New Hampshire; Boston; Newport; New York; Philadelphia; Washington; Annapolis; Norfolk; Charleston; Parris Island, South Carolina; Key West; Great Lakes, Illinois; St. Thomas, Virgin Islands; San Diego, California; Mare Island, California; Bremerton, Washington; Pearl Harbor, Hawaii; Guam; and Caracao, Philippine Islands. Besides caring for their own personnel, these hospitals have furnished medical and surgical aid to Veterans' Bureau patients, 3225 beds in sixteen hospitals having been assigned for this purpose during 1924. The American Red Cross supplements recreational and occupational therapy facilities at the hospitals.

Two hospital ships, the Relief and the Mercy, are maintained by the bureau. To these ships, which are manned by medical specialists, are sent the critically ill of the fleet, and those whose ailments requiring a long time for cure.

A naval dispensary is maintained at Washington, and there are also dispensaries at all navy yards and stations.

The Hospital Corps.[9] The Hospital Corps consists of about four thousand persons, including pharmacists of various grades, hospital apprentices, and various other enlisted personnel who assist in medical work.

[8] See The Navy as a special field for medical work. By the Surgeon General (1923).

[9] See Hospital Corps Handbook of the United States Navy (1923).

The Nurse Corps. The strength of the nurse corps is about five hundred. Nurses have the rank of commissioned officers, and also retirement privileges. Their duties are those of graduate nurses in caring for the sick in hospitals and on board hospitalships and transports, but they are not assigned to the fleet. The nurse corps has been active in training civilian native nurses in Guam, Samoa, the Virgin Islands, and Haiti, work which has had a significant effect on maternal and infant mortality in these possessions.

The Dental Corps. The Dental Corps has somewhat over 150 officers, although this number is considered inadequate for the naval force. Their duties are to give dental service to the entire personnel.

Bureau Divisions. The bureau has divisions as follows: Administration; Personnel; Rehabilitation and Morale; Physical Qualifications and Medical Records; Preventive Medicine; Finance and Supplies; Planning and Publications; and Dental.

Of particular interest to public health are the activities of the Division of Preventive Medicine. These include:[10] Collection and editing of morbidity and mortality reports, and the compilation and presentation of vital statistics; study of annual, monthly, and special sanitary reports, and epidemiological data; recommendations regarding hygiene and sanitation, especially housing, ventilation, heating and lighting, toilet and bathing facilities, drainage, water supplies, sewage and refuse disposal, insects and vermin extermination, food, ship hygiene, industrial hygiene, personal hygiene, and clothing; study of health conditions in civilian communities constituting the environment of naval stations and ports visited by naval vessels, and study of the health reports of the Public Health Service and those of state and local health authorities; dissemination of information relating to preventive medicine for the use of medical officers of the Navy; provision for a course of instruction at the Naval Medical School in naval hygiene, epidemiology, sanitation, and the prevention and control of communicable diseases.

The description of the health of the Navy, as given in the 1924 report of the Surgeon General, is an excellent treatise in public health. The discussion on the control of the venereal diseases is

[10] Surgeon General, Annual Report, 1924, p. 11.

especially noteworthy and has been highly praised by experts in social hygiene. These diseases appear among the six leading causes of sickness and disability in the Navy, and gonorrhea led all diseases in 1923. The control of the venereal diseases among the Navy personnel obviously has a direct influence upon the spread of those diseases among the civil population. Health conditions in the Navy are on the whole very favorable. The death rate in 1923 was 4.05 deaths per one thousand personnel, considerably less than half that of the registration area of the United States, though, of course the personnel of the Navy represents a special age group and also a selected group from the general population. The morbidity admission rate for the Navy in 1923 was 608 per one thousand personnel, including all causes.

Appropriations. The annual appropriations to the Bureau of Medicine and Surgery are about $3,000,000.

CHAPTER XIV

INDEPENDENT ESTABLISHMENTS

In addition to the ten executive departments, there are about twenty-five independent establishments which operate directly under the President or Congress. A number of these are interested in public health or medical activities. The most notable instance is the United States Veterans' Bureau, which is charged with giving medical relief and vocational training to ex-service men.

The Employees' Compensation Commission provides medical services for civil employees of the national government injured in the course of their employment. The Federal Board for Vocational Education, in administering the expenditure of subsidies to the states for vocational education and industrial rehabilitation, carries on some activities of indirect influence on the public health.

There are several other independent establishments which should be mentioned as having a more or less indirect interest in public health. The Smithsonian Institution has a Hall of Health containing a health exhibit and also a medical and pharmacological exhibit in its Arts and Industries Building; the Bureau of Ethnology of the Smithsonian Institution has made anthropological studies and investigations of diseases. The Interstate Commerce Commission has a Bureau of Safety, which conducts the activities of the Commission relating to the safety of passengers, employees, and property, except locomotive inspection, and the regulation of the transportation of explosives.[1] The Federal Narcotics Control Board makes regulations regarding the import and export of certain narcotics. An Interdepartmental Social Hygiene Board was created in 1918 by Chapter 15 of the Army appropriation act (40 Stat. L., 886). This Board, consisting of the Secretaries of War, Navy, and the Treasury, respectively, and representatives of the Public Health Service and the medical services of the Army and Navy, with an executive secretary and a staff of workers, continued

[1] See Bernhardt, The Interstate Commerce Commission. Institute for Government Research, Service Monograph No. 18 (1923).

in operation until June 30, 1922, after which time Congress made no further appropriations for the work of the Board.[2]

The United States Veterans' Bureau. The United States Veterans' Bureau, an independent establishment, directly under the President, is the agency charged with the administration of all relief for disabled veterans of the World War and hospitalization for the veterans of all other wars, military expeditions and occupations subsequent to 1897. This bureau administers all laws relating to compensation, insurance, rehabilitation, and medical care and treatment of all veterans entitled to such service. It is, of course, chiefly with the medical aspects of the work that we are concerned here, activities which have been so tremendous in scope and ramifications that only a summary of their development, present activities, and organization can be given.

History and Development.[3] The United States Veterans' Bureau was not created until 1921, though relief for disabled veterans of the World War dates from October 6, 1917. At that time Congress passed an act (40 Stat. L., 406) granting compensation to disabled soldiers through the Bureau of War Risk Insurance, which had been created in the Treasury Department in 1914 (38 Stat. L., 711) to insure vessels, cargoes, seamen, and personal property of officers and seamen against war risk. This act further provided (Section 302) that, in addition to compensation, the injured person should be furnished by the United States such reasonable medical, surgical, and hospital services as necessary. In order to perform this work, a Medical Division was organized in the bureau, by detail of officers from the Public Health Service. Physical examinations of men in the field and provisions for hospital facilities were duties delegated to the Public Health Service. In fact, the medical care of veterans for the four years or so following 1917 belongs to the history of the Public Health Service, though it will be described here. During this period the activities for veterans grew to such an extent that they overshadowed the regular functions of the Public Health Service.

Early in 1918 the Director of the Bureau of War Risk Insurance requested the Public Health Service to give hospital relief to dis-

[2] See annual reports of the Board for activities.

[3] See Schmeckebier, The Public Health Service. Institute for Government Research, Service Monograph No. 10 (1923), pp. 55-75.

abled soldiers, although there were available at that time only between five hundred and six hundred beds in the Marine Hospitals. In July of that year the Service was asked to provide accommodation for fourteen thousand tuberculous soldiers, and in September a medical committee prophesied that twenty thousand men suffering from tuberculosis and needing care would be rejected in the years 1918 and 1919. Congress then had no hospital program, had supplied no funds for that purpose, and did not do so until March 3, 1919, when an act was passed (40 Stat. L., 1302) appropriating $9,050,000 to provide hospital facilities. This law also transferred a number of army hospitals to the Public Health Service and authorized the transfer of others. A sum of $785,333 was appropriated for operation and maintenance of hospitals during the remainder of the fiscal year 1919, while the regular maintenance appropriation for 1920 amounted to $4,000,000. Several deficiency acts for the same year made additional appropriations of $20,413,963.95.

The three months following the passage of the act of March 3, 1919, saw an enormous increase in the hospital work of the Public Health Service. During the fiscal year 1918, the Service had cared for 12,797 patients, but in 1919, as many as 26,991 were furnished in-patient treatment under its supervision. Over two hundred reserve medical officers were assigned to active duty, and the number of acting assistant surgeons was increased from 578 on June 30, 1918, to 2296 on June 30, 1919.

In spite of this increase, 7200 beds being available by December of 1919, sufficient hospital facilities were still lacking, and contracts had to be made with private institutions. On June 30, 1920, there were in operation fifty hospitals; a year later the number had increased to sixty-two. The number of patients treated in 1920 was 68,791, while in 1921 it was 113,496. By the end of the fiscal year 1921, 485 reserve officers were on duty and 1511 acting assistant surgeons were employed. From October 6, 1917, to June 30, 1920, all hospital treatment for veterans was under the control of the Public Health Service, but after the latter date, Army and Navy hospitals, and those of the National Homes for Disabled Volunteer Soldiers were also available, and these were supervised by medical officers of the respective services. Up to April 19, 1921, district supervisors of the Public Health Service, in the fourteen districts

which had been established, had charge of the assignment of patients to hospitals. On that date, however, the Secretary of the Treasury transferred to the Bureau of War Risk Insurance this work of assignment and also the supervision of all private hospitals with which the bureau had contracts. As an example of the amount of this contract service, the efficacy of which has been severely criticized, out of 9769 neuro-psychiatric patients treated between March 3, 1919, and June 30, 1920, more than half, or 5641, were in contract institutions.

In order to remedy the deficiency in the number of hospitals, Congress on March 4, 1921 (41 Stat. L., 1364), appropriated $18,600,000 for additional facilities. At that time there were three government organizations interested in the relief of disabled soldiers—the Bureau of War Risk Insurance and the Public Health Service, both in the Treasury Department; and the Federal Board for Vocational Education, an independent establishment which had been charged by Congress with the vocational education of veterans and the determination of the amount of allowances for men in training. In medical matters the Public Health Service was also acting as agent for the Federal Board for Vocational Education. There was much dissatisfaction with this division of authority, and considerable complaint arose regarding delay in obtaining hospital treatment, the Public Health Service coming in for much of this criticism.

An independent establishment known as the Veterans' Bureau (the name later being changed to United States Veterans' Bureau) was created by the act of August 9, 1921 (42 Stat. L., 147). To it were transferred the entire work of the Bureau of War Risk Insurance, the activities of the Federal Board for Vocational Education pertaining to ex-service men, and certain of the hospital work, though the Public Health Service hospitals were not transferred. The Director of the Bureau was authorized, however, to utilize the facilities of the Public Health Service, and he was made responsible for the "proper examination, medical care, hospitalization, and convalescent care" of discharged soldiers. The President was authorized to transfer to the Veterans' Bureau specifically designated hospitals, and this he did by executive order on April 29, 1922.[4] This left the Public Health Service in control only

[4] See Surgeon General of the Public Health Service, Annual Report, 1922, p. 228.

of its Marine Hospitals, though many veterans were receiving treatment in those institutions. Of the fifty-five hospitals transferred to the Veterans' Bureau, forty-six had a total of 12,069 patients and 11,006 employees, 755 of whom were commissioned officers of the Public Health Service detailed to the Veterans' Bureau for duty. Dispensaries and out-patient clinics had been transferred from the Public Health Service to the Veterans' Bureau on February 1, 1922.

On May 11, 1922 (42 Stat. L., 507), Congress appropriated another $12,000,000 for hospital construction, and also authorized the Director of the Veterans' Bureau to incur obligations for the same purpose to the extent of $5,000,000. The peak of the load in hospitalization occurred in March of 1922, when nearly thirty-one thousand patients were being cared for. From that time to the passage of the World War Veterans' Act, on June 7, 1924, there was a steady decrease in the number of patients under treatment, so that at the expiration of the fiscal year 1923, there were but approximately 23,500 cases. Most of this decrease was in general medical and surgical cases, although some reduction also occurred among tuberculous patients. The number of neuro-psychiatric patients, nevertheless, increased consistently during this period, and apparently has not yet reached its peak. Upon the passage of the World War Veterans' Act, there were but 22,457 patients under treatment in all hospitals. The liberalizing features of this act, however, resulted in such an increase in patients that on February 26, 1925, or approximately eight months later, there were 30,753 cases in all hospitals, a figure but slightly below that of the peak load of March, 1922. This increase, representing the greatest ever experienced over a similar period of time, was not confined to any one type of patient, but fairly well distributed over the three major classifications of diseases. The total number of patients under treatment on June 30, 1925, was 26,631, an appreciable decrease since February, but due in part to the customary seasonal reduction at that time of the year.

The act of August 9, 1921, broadened the scope of medical treatment to include all disabilities of service origin not due to willful misconduct whether compensatable or otherwise. In order the better to handle medical problems, the Medical Service was decentralized during 1922 and the bulk of operation placed in the

district offices. During the fiscal year 1923 there were 82,814 admissions to hospitals, and there were furnished 8,952,021 in-patient days of treatment. In addition, 2,099,424 out-patient treatments were given. At the close of that fiscal year there were ninety-one government hospitals available in whole or in part for beneficiaries of the Bureau to the extent of 25,714 beds. There were also 1009 civil hospitals being used, caring for 6738 patients. On June 30, 1924, there were eighty-three government hospitals in use, furnishing 24,877 beds, and but 405 contract hospitals in use, caring for 4803 patients, whereas on June 30, 1925, ninety-two government hospitals were in use furnishing 30,328 beds, and 327 civil hospitals, caring for 4172 patients. Admissions in 1924 totaled 64,053 and in 1925, 77,981, with in-patient days of treatment rendered totaling 8,087,771 and 10,018,125, respectively. Out-patient treatments given during 1924 and 1925 totaled 1,703,316 and 1,257,967, respectively. For these two years the cost of operation of veterans' hospitals was approximately $19,500,000 and $23,350,000, respectively.

A Senate investigation of the activities of the Bureau was conducted during 1923 and 1924, and a somewhat voluminous report filed in the latter year. On June 7, 1924, an act known as the World War Veterans' Act was passed (43 Stat. L., 607) to codify the many laws previously enacted. Among other provisions, this law extended the hospital facilities of the bureau to every honorably discharged veteran of the Spanish-American War, the Philippine Insurrection, and the Boxer Rebellion, as well as the World War, suffering from neuro-psychiatric or tubercular ailments and diseases, paralysis agitans, encephalitis lethargica, or amœbic dysentery, or the loss of sight of both eyes, regardless whether such ailments or diseases are due to military service or otherwise (Title II, Section 202, Par. 10). This same section also authorized hospitalization to the extent of available government facilities for veterans in any military occupation or military expedition since 1897 not dishonorably discharged, without regard to the nature or origin of disability. Another important beneficial feature of this legislation was the extension of the presumption of service origin to January 1, 1925, up to which date, if certain diseases, namely, neuro-psychiatric, tuberculosis, paralysis agitans, encephalitis lithargica or amœbic dysentery, are considered to have developed to a 10 per cent degree or more of disability, service connection is pre-

sumed and the claimant's right to disability compensation established. This provision and the above provisions for general hospitalization were directly responsible for an immediate increase in active disability awards and for a material increase in patient population, since it was necessary to admit many cases to hospitals for observation for the determination of diagnosis, and because many other cases became eligible for treatment.

For the purpose of carrying out the policy to replace leased facilities or government-owned temporary facilities by modern hospital structures, and to eliminate, in so far as possible, civil and state hospitalization, further appropriations were made for hospital construction through the passage of an act of June 5, 1924 (43 Stat. L., 389), authorizing an appropriation of $6,850,000, and through an act approved March 3, 1925 (43 Stat. L., 1212), authorizing the appropriation of $10,000,000.

Current Activities. The current activities of the Medical Service include the administrative control over the operation of hospitals and dispensaries, the furnishing of medical and dental relief to claimants entitled thereto, the physical examination of claimants to determine their rights to benefits under existing law and need for hospital or out-patient treatment, the rating of disabilities, and the standardization of hospitals and dispensaries, as well as the methods and materials employed in treating and examining claimants. These represent the major responsibilities of the Medical Service, although their performance involves many other kindred matters.

Disability Ratings. One of the functions of the Medical Service is to assist in the determination of disability ratings. At the present time disability ratings are made in the regional offices by claims and rating boards, which are composed of claim examiners, vocational specialists, medical examiners and specialists in the major disability from which the claimant is suffering. A claimant whose case is to be rated is first referred to a general medical examiner who is a member of the Claims and Rating Board, and then to specialists for any necessary special examination. After all examinations are completed they are attached to the claimant's folder and are reviewed by the board. The claimant is then called for a personal appearance, and the disability from which he is suffering is rated in accordance with the authorized schedule of ratings. Before the

claimant leaves he is advised of his rating, and is allowed to discuss his case with the board.

In cases of dissatisfaction an explanation is given as to the reason why the particular rating in that case was decided upon. This method has eliminated the former procedure of rating upon a report of physical examination without contact with the claimant or beneficiary, has brought about a greater satisfaction among claimants, and has resulted in fewer appeals to the Central Board of Appeals. During the fiscal year 1925, 457,987 ratings were made, and there were reported some 34,875 appeals, as contrasted with 57,055 in 1924.

Schedule Disability Ratings. The former provisions of the War Risk Insurance Act as amended, which call for the preparation of a schedule for disability ratings based upon the average impairments of earning capacity resulting from injuries in civil occupations, etc., were amended by Section 202, Sub-Section 4, Par. 2, of the World War Veterans' Act to require preparation of a schedule based "as far as practicable upon the average impairments of earning capacity resulting from such injuries in civil occupations similar to the occupation of the injured man at the time of enlistment," etc. This feature of the new legislation imposed upon the bureau one of the heaviest constructive tasks that ever confronted it, not only because of the inherent magnitude and difficulties of the task, but also because of the lack of adequate precedents. A new schedule of disability ratings was being prepared in November, 1925.

Vocational Rehabilitation. After the Claims and Medical Rating Groups had examined and certified applicants, they were entitled to vocational training under certain conditions. This work has been administered by the rehabilitation Division of the bureau. At the end of the fiscal year 1924 about 45,000 trainees were receiving this vocation service while at the end of the fiscal year 1925 there were some 21,803. At one time in April of 1922, there were nearly 110,000 such beneficiaries. A total of 179,747 disabled soldiers entered upon this training, and more than 106,608 completed it. In accordance with the present law, no applications can be received subsequent to June 30, 1924, no original inductions into training made subsequent to June 30, 1925, and all training must close by June 30, 1926.

Certain of the training given is of special interest from the standpoint of public health. Among the employment objectives

of trainees on June 30, 1925, it is interesting to note that the bureau classed as "medical," those of 731 persons. This group actually includes only 151 persons studying to be physicians, however, while 198 were taking dental courses, and 148 instruction in mechanical dentistry. Other training included that for chiropractic, embalming, laboratory work, optical work, osteopathy, pharmacy, and veterinary medicine. It is stated that "training in medicine, dentistry, pharmacy, and all courses affecting the public health was given in class A institutions only, though medical authorities assert that such a rating is impossible in the case of other than certain of those teaching regular medicine.

Organization of the Medical Service.[5] The Medical Service of the Veterans' Bureau was reorganized in June, 1924, when the present Medical Director, Dr. E. O. Crossman, was appointed. For six months previous to that date the medical and rehabilitation divisions had been operated as separate divisions of this same service, but this arrangement was dissolved on June 9. The functions of the Medical Service have been stated to be,[6] "to serve the bureau in all medical matters relative to the administration of the laws under which the bureau operates; to carry out the policies of the director as set forth in regulations and orders governing the provisions of medical, surgical, and hospital care, dental treatment, prosthetic appliances, physical examination of claimants, and rating of claims; and the administration of bureau hospitals, dispensaries, and other relief facilities."

The Medical Director is assisted in the administration of the Medical Service by an executive office which supervises miscellaneous medical services, and he also has the advice of a Medical Council, composed of eminent members of the profession. Dr. Ray Lyman Wilbur is permanent chairman of this Council and Dr. Kennon Dunham is Vice-Chairman. The Council is divided into a group of hospitals, dispensaries, and general medical welfare; a committee on general medicine and surgery; a group on neuro-psychiatry; a group on tuberculosis; and a group on investigation and research.

Three main divisions have been set up within the Medical Service. These are the General Medical Division, the Tuberculosis

[5] See U. S. Veterans' Bureau, Medical Bulletin, July, 1925.
[6] Annual Report, 1924, p. 31.

Division, and the Neuro-psychiatric Division, each of which has assigned to it two chief administrative officers, one in charge of the hospitals conducted by the division and the other of all the medical work pertaining to that division in the district or regional offices, including the examination and treatment of patients in dispensaries, their hospitalization, and after-care. In addition to the three main divisions, there are subdivisions of dentistry, prosthetics, occupational therapy and physiotherapy, and insular and foreign affairs. Finally, there is a nurses' section, a dietetic section, and a section devoted to psychiatric social work. The fourteen districts into which the work was formerly divided have been abolished, and in their place fifty-four regional offices have been established in accordance with the authority of the law of 1924 in the important centers in each state. The organization in the regional offices is along the same general lines as in the central office in Washington.

On June 30, 1925, the number of physicians and dentists in the service of the Bureau was 2125, out of a total of 27,622 employees. On June 7, 1924, an executive order was issued placing all of the commissioned officers formerly detailed by the Public Health Service, 649 in number, on the regular rolls of the Veterans' Bureau. The bureau has never had a medical corps, similar to those of the Army, Navy, and Public Health Service, though such a corps has been repeatedly urged. Nurses in the employ of the bureau numbered 1660 on June 30, 1925, and there were on this date 138 dietitians, 206 physiotherapy experts, and 366 occupational therapy employees.

Ratings. Prior to the fiscal year 1925 there was in each of the then existing fourteen district offices a Rating Section composed of medical referees who were specialists in the various branches of medicine. These medical referees interpreted reports of physical examinations and determined the degree of disability, as well as service connection, based upon military records, in conjunction with the history of the case since discharge. Boards of appeal were set up in the several district offices, which considered cases appealed from the decisions of the medical referees, and in addition a Central Board of Appeals was established in the central office to consider appeals on decisions by the district boards. Commencing with the fiscal year 1925, however, a change of system was effected, coincident with the establishment of the fifty-four regional offices.

Central Board of Appeals. Commencing with January, 1925, the Central Board of Appeals, formerly located in Washington, was decentralized and is now functioning as five separate sections under the general supervision of the Chairman of the Board of Appeals at the central office. These sections of the board are located at Area Headquarters in Boston, New York, New Orleans, Chicago, and San Francisco. Final action is taken on appeal cases by these sections of the board exactly as if the cases had been sent to the central office. Appeal cases coming to the personal attention of the Director are handled by an Advisory Group on Appeals. This group is located in the central office, and is directly responsible to the Director.

Medical Statistics. Medical statistical work is carried on in one of the other Services, the Coördination Service, where there are compiled, maintained, and interpreted all records pertaining to the medical, regional, and hospital activities of the bureau, and where charts and reports are prepared. This service has on file 493,875 cards representing total admissions to hospitals to June 30, 1925, though this does not indicate the number of patients, as 113,271 patients have had more than one hospital period. The total number of separate individuals hospitalized amounts to 296,898. In addition, there has been established within the Medical Service itself a Medical Research Section.

Hospitals. The administration of the hospitals of the Veterans' Bureau is under the jurisdiction of the Medical Service at Washington. The fifty hospitals are divided into three groups as follows:

GENERAL MEDICAL AND SURGICAL (17)

No. 32 Washington, D. C.
No. 48 Atlanta, Ga.
No. 52 Boise, Idaho.
No. 53 Dwight, Ill.
No. 59 Tacoma, Wash.
No. 63 Lake City, Fla.
No. 65 St. Paul, Minn.
No. 67 Kansas City, Mo.
No. 69 Ft. Thomas, Ky.
Edward Hines Jr. Hospital. Maywood, Ill.
No. 77 Portland, Ore.
No. 84 Algiers, La.
No. 88 Memphis, Tenn.
No. 90 Muskogee, Okla.
No. 91 Tuskegee, Ala.
No. 92 Jefferson Barracks, Mo.
No. 99 Excelsior Springs, Mo.

TUBERCULOSIS (17)

No. 27	Alexandria, La.	No. 79	Dawson Springs, Ky.
No. 41	New Haven, Conn.	No. 80	Las Animas, Colo.
No. 50	Whipple, Ariz.	No. 85	Walla Walla, Wash.
No. 51	Tucson, Ariz.	No. 89	Rutland, Mass.
No. 55	Ft. Bayard, N. M.	No. 93	Legion, Texas.
No. 60	Oteen, N. C.	No. 96	Tupper Lake, N. Y.
No. 64	Camp Kearny, Calif.	No. 98	Castle Point, N. Y.
No. 68	Minneapolis, Minn.	No. 102	Livermore, Calif.
No. 72	Helena, Mont.		

NEURO-PSYCHIATRIC (16)

No. 24	Palo Alto, Calif.	No. 78	North Little Rock, Ark.
No. 37	Waukesha, Wisc.	No. 81	Bronx, N. Y.
No. 42	Perry Point, Md.	No. 86	Sheridan, Wyo.
No. 44	West Roxbury, Mass.	No. 94	American Lake, Wash.
No. 49	Philadelphia, Pa.	No. 95	Northampton, Mass.
No. 57	Knoxville, Iowa.	No. 100	Camp Custer, Mich.
No. 62	Augusta, Ga.	No. 101	St. Cloud, Minn.
No. 74	Gulfport, Miss.		

New hospitals are planned and their construction supervised by the Construction Division of the bureau, which consults the Medical Service as to the requirements of the institution. The average cost of a hospital has been about $3700 per bed.

The Bureau in General. Besides (1) the Medical Service and (2) the Rehabilitation Division, already mentioned, the Bureau has (3) a Claims and Insurance Service, (4) a Finance Service, (5) Office of General Counsel, (6) a Guardianship Service, (7) a Coördination Service, including the Standardization Division, the Evaluation Division, the Investigation Division, and the Budget Office, and (8) certain independent divisions, such as the Supply Division, the Construction Division, the Personnel Division, the Mails and Records Division, and the Information and Coöperation Division. Disbursements by the Bureau during the fiscal year 1925 amounted to $393,755,857.18. So far, the Veterans' Bureau and the activities undertaken in behalf of ex-service men have cost about three billions of dollars. Of the disbursements for 1925, only 8.39 per cent were for medical and hospital expenses, and 0.99 per cent for hospital facilities and services, these figures, how-

ever, not including the salaries, allowances, and travel of medical personnel in regional offices, nor any personnel in hospitals. For the fiscal year 1925, the total amount appropriated was $406,713,559.21. On June 30, 1925, active disability compensation awards totalled 211,644, active death compensation awards totalled 65,391, and 171,319 claims for term and United States Government Life Insurance had been awarded.

The Federal Board for Vocational Education.[7] The functions of the Federal Board for Vocational Education are to administer the acts of Congress providing for the promotion of vocational education in coöperation with the states, and for the vocational rehabilitation of persons disabled in industry. The board also investigates vocational matters and issues reports thereon, and studies agriculture, trade, commerce, home management and domestic science, and allied topics. Some of its work has a distinct bearing on public health.

History and Development. The Federal Board for Vocational Education was created by an act of Congress approved February 23, 1917 (39 Stat. L., 929). This law, which is generally known as the Smith-Hughes Act, or the national vocational education act, provided for a continuing federal appropriation for the purpose of coöperating with the states in establishing and maintaining programs for vocational education of less than college grade, and for the preparation of teachers to carry out such programs. The federal government had previously made grants to aid vocational education, notably by means of the Morrill Land Grant Act of 1862 (12 Stat. L., 503), the Hatch Act of 1887 (24 Stat. L., 440), the second Morrill Act of 1890 (26 Stat. L., 417), and the Smith-Lever Act[8] of 1914 (38 Stat. L., 372), but all of these laws were concerned with vocational education of college grade. In 1914 Congress, yielding to pressure from industrial groups, created (38 Stat. L., 767) a Federal Commission on National Aid to Vocational Education, which investigated the

[7] See Holt, The Federal Board for Vocational Education. Institute for Government Research, Service Monograph No. 6 (1922).

[8] See page 217.

subject and reported at length, with the result that the Smith-Hughes Act was passed.

The states were quick to avail themselves of the act, and by December 31, 1917, all had accepted its terms. The Federal subsidies were arranged in three parts: (1) For teacher training, (2) for industrial education, and (3) for agricultural education. By the terms of the law, each of these sums began at $500,000 a year and increased annually until 1926, when a maximum of $3,000,000 is reached for agricultural education and also for industrial education, and $1,000,000 for teacher training. The total federal vocational education funds have increased from $1,655,586.72 in 1918 to $7,154,901.51 in 1926.

The scope of the activities of the board was enlarged during the World War, when Congress by an act of June 27, 1918 (40 Stat. L., 617), charged it with the duty of giving vocational rehabilitation to disabled soldiers. The Bureau of War Risk Insurance was to determine whether the soldier was entitled to compensation, and only an ex-service man who had been awarded such compensation could receive vocational training. By an act of July 11, 1919 (41 Stat. L., 158), however, the board was made sole judge of the need for vocational education. This duty called for many medical examinations, and a medical staff had to be built up. In order to assist in carrying out the work, the Public Health Service assigned medical officers to the board and also arranged for physical examinations to be made at the stations of the Service. When, on August 9, 1921, the Veterans' Bureau was created, all of the vocational rehabilitation for soldiers was transferred to it.[8] At that time there were nearly ninety thousand men in training in about three thousand schools and colleges throughout the country.

Vocational education for civilians injured in industries was provided by an act of June 2, 1920 (41 Stat. L., 735), and the Federal Board was charged with the administration of the law, beginning June 30, 1921. This law followed the terms of the national vocational education act, and had for its purpose the restoration to useful working ability of any citizen who might, through injury or disease, become so handicapped that he could not continue to work

[8] See page 333.

at his job efficiently. The law provided for an appropriation to the states of $750,000 for the fiscal year 1921, and $1,000,000 annually for the next three years. By the end of the fiscal year 1924, thirty-six states had accepted the act. On June 5, 1925, the law was amended (43 Stat. L., 430), and annual appropriations of $1,000,000 authorized through the fiscal year 1930. In addition, a sum of $75,000 annually was provided for a three-year period in order that the board might conduct research.

Current Activities. The board has three general functions: First, the administration of those federal funds allotted to the various states to encourage and assist them in developing programs of vocational education of less than college grade and in developing corresponding programs for civilian rehabilitation in the states which have accepted the civilian vocational rehabilitation act; second, the conducting of research and studies for the purpose of promoting and improving vocational education and civilian vocational rehabilitation; and, third, assisting the states in the promotion and development of their programs along these lines.[10]

In 1924 there was an enrollment of 652,994 persons in federally aided schools. Of this number, 85,984 were interested in agricultural studies, 409,843 in trade or industrial work, and 157,167 in home economics subjects. The number of schools receiving aid in 1924 was nearly seven thousand and there were also about 130 teacher-training institutions.

Of special interest from the standpoint of public health are the activities in home economics and in civilian rehabilitation. Training in home-making is construed by the board to include the determination of the expenditure of income, the direction and performance of labor involved in home management, and the information and skill necessary to carry out the various tasks connected with feeding and clothing the family, the care of the house and its equipment, the care of family health, and the care and rearing of children.

In order to promote interest in these subjects, the Home Economics Education Service of the board has conducted certain re-

[10] Annual Report, 1924.

search and has published a number of bulletins as a result. These are as follows:

No. 23. Clothing for the family (1918).
No. 28. Home economics education; organization and administration (Revised, 1924).
No. 35. Use and preparation of foods (1919).
No. 37. Survey of the Needs in the Field of Vocational Home Economics Education (1919).
No. 65. Child care and child welfare (1919).
No. 71. The home project; its use in home-making education (1921).
No. 79. A study of home economics education in teacher-training institutions for negroes (1923).
No. 86. The health of the family; a program for the study of personal, home, and community problems (1923).

In its Employment Management Series, the board has a bulletin (No. 47, 1919) on "Industrial accidents and their prevention."

Civilian rehabilitation had in 1924 reached over 13,000 persons in thirty-six states. The average cost of rehabilitating a disabled individual was computed to be $221.01, a reduction from a figure of $262 in 1923. This cost is borne partially by federal and partially by state funds. In developing vocational training for those "disabled in industry or any legitimate occupation," as the law states, the physical restoration of the individual has been recognized as a necessary foundation. According to the annual report of the board for 1924, rehabilitation clinics have been organized in a number of states in order to provide diagnosis and medical and surgical treatment for persons eligible for vocational rehabilitation.

Out of 628 types of jobs at which six thousand rehabilitated persons are working, those of interest to the public health which are named include chiropractor, dental mechanic, dentist, embalmer, bacteriologist, masseur, nurse, hospital orderly, pharmacist, physician, safety supervisor, social worker, cow tester, milk tester, veterinary, X-ray technician.

Organization and Personnel. The Federal Board for Vocational Education consists of the Secretaries of Labor, Commerce, and Agriculture, respectively; the Commissioner of Education; and three persons appointed by the President, subject to approval by the Senate, to represent labor, agriculture, and manufacture

and commerce. The board employs a Director, who is assisted by a secretary and chief clerk, and an editor and educational consultant. There are two divisions, Vocational Education, and Civilian Vocational Rehabilitation. The former is subdivided into a trade and industrial education service, an agricultural education service, the home economics education service, and a commercial education service. Each service in turn has supervisors in charge of four regions of the country.

In 1925 the board had a personnel of fifty-two, of whom twenty-three were of professional grade.

The United States Employees' Compensation Commission.[11] The United States Employees' Compensation Commission administers the Federal Compensation Act of September 7, 1916 (39 Stat. L., 742). This law had been preceded by an act of 1908 (35 Stat. L., 556), which charged the Secretary of Commerce and Labor with the duty of providing compensation to certain government employees injured in the course of their duties. The 1908 law was administered by the Bureau of Labor (now Labor Statistics). Because of the inadequacy of this act, it was superseded in 1916 by the present statute.

Current Activities. The law provides that the United States shall pay compensation for the disability or death of any employee resulting from a personal injury sustained while in the performance of his duty, but no compensation shall be paid if the injury or death is caused by wilful misconduct. For total disability, a monthly compensation equal to 66⅔ per cent of the employee's salary shall be paid up to a maximum of $66.67, and for partial disability, a monthly sum equal to two-thirds of the difference between his monthly pay and his earning capacity. Immediately after the injury and for a reasonable time thereafter, the United States shall furnish the injured employee, reasonable medical, surgical, and hospital services and supplies unless he refuses to receive them. An amendment to the law, approved June 5, 1924 (43 Stat. L., 389), defines injury to include "in addition to injury by accident, any disease proximately caused by the employment." This amendment also provides that the finding of facts and the decisions of the commission shall be final.

[11] See Weber, The Employees' Compensation Commission. Institute for Government Research, Service Monograph No. 12 (1922).

The compensation law provides that medical services to injured employees shall, wherever possible, be supplied by medical officers of the United States. Accordingly, arrangements have been made with the Public Health Service, whereby the marine hospitals and other relief stations are utilized. That service has also detailed medical officers to serve with the commission. During the fiscal year, 1924, nearly one-quarter of all patients in Public Health Service hospitals were from the Employees' Compensation Commission. The cost of such hospitalization and out-patient service comes out of the appropriation of the Public Health Service and not that of the commission. Dispensaries of the Army and Navy are also used for first-aid and out-patient work and the hospitals of these services might be, but rarely are, employed.

In order to provide medical service in cities and towns where facilities of the Public Health Service are not available, the commission has designated 3588 physicians, of whom 199 are ophthalmologists, seventy-two specialists in orthopedic surgery, and seven neuropsychiatrists. The Public Health Service has only two general hospitals west of the Mississippi, so that these private contract physicians are needed there and also elsewhere. In cases of emergency, the nearest physician or hospital may be called upon for aid.

The total number of federal employees on June 30, 1925, was 557,757, of whom 63,756 were in the District of Columbia, and the remainder in other parts of the country. Every month, about fifteen hundred of these employees are injured. From September 7, 1916, to the close of the calendar year 1923, there had occurred 13,233 injuries upon which action had been taken by the commission.[23] Of these, 236 were deaths, 34 permanent total disabilities, and 434 permanent partial disabilities. During the year 1924 the largest number of injuries (4891) occurred among employees of the Post Office Department, with the War Department second (3585), and the Navy third (1449). It should be remarked, however, that the Post Office Department had in 1924 some 300,000 employees, whereas the Army and Navy Departments had only about 50,000 each. Statistics compiled by the Employees' Compensation Commission seem to show numbers and not rates.

[23] Annual Report, 1924.

When a federal employee is injured, the procedure is, in general, something like this: within forty-eight hours, written notice must be given by the employee to his immediate superior. If the injury results in any medical charge or in loss of time other than the remainder of the day or shift, the superior reports to the commission. A claim for compensation must be made on the proper form, which includes a medical statement, and must be filed within sixty days with the superior, who transmits it to the commission. Here it is received in the Assembly Division and transmitted from there to the Claims Division. Claims requiring interpretation of medical questions are referred to the Medical Division. Every claimant must submit to a medical examination and if disagreement occurs between the individual's own physician and a federal medical officer, provision is made for the appointment of a medical referee by the commission. The commission itself finally passes on all claims. Payments are, however, subject to check by the Comptroller of the Treasury.

In addition to paying compensation and providing necessary medical relief, the commission compiles statistics and attempts to analyze them, distributes pamphlets explaining the law to government employees, and directs and conducts damage suits where the injury or death has been caused by a third party. No attempt is made to do preventive work, that is, to undertake safety and industrial hygiene activities in government departments, so as to reduce accidents and injuries. Such efforts along this important line are, if at all, conducted by the various departments themselves.

Organization. The Employees' Compensation Commission consists of three commissioners appointed by the President, wtih the consent of the Senate. Each receives a salary of $4000 a year. Each has a separate office. There is also a secretary, and there are seven divisions: Assembly, Claims, Medical, Medical Claims, Legal, Statistical, and Disbursing. The personnel authorized for 1925 was seventy-four. The annual appropriation aggregates about $2,500,000, of which about half a million goes for medical treatment and supplies, though, as previously stated, this does not include service rendered by the marine hospitals of the Public Health Service, which the commission estimates is worth about $700,000 a year.

The Federal Narcotics Control Board. The Federal Narcotics Control Board consists of the Secretary of State, the Secretary of Commerce and the Secretary of the Treasury. The board was created by an act approved May 26, 1922 (42 Stat. L., 596), known as the Narcotic Drugs Import and Export Act, the purpose of which was to prohibit the importation or exportation of certain narcotic drugs (opium, coca leaves, cocaine, and their derivatives) except for legitimate medicinal purposes. The administration of the act is vested in the Treasury Department, and the only function of the board is to make regulations for carrying it out. Such regulations were made on October 15, 1922, and revised in January, 1925. The head of the narcotic division of the Bureau of Internal Revenue, Treasury Department, acts as secretary of the board.

CHAPTER XV

SUMMARY AND COMMENT

The Bureaus Involved. In the preceding pages there have been described some forty bureaus or other administrative units of the national government which are concerned directly or indirectly with some phase of the public health. These bureaus may be classified under four headings: (1) Those in which the public health activities constitute the major work and primary purpose of the bureau or other unit; (2) those in which public health work is an important activity, but secondary to the general scope of the bureau or other unit; (3) those which undertake purely medical work or public health activities of a special and somewhat limited character; and (4) those in which the public health or medical work is of a minor or more or less insignificant or casual importance. In accordance with this classification, the Federal agencies described may be grouped as follows:

1. *Major Interest in Public Health*
   - Public Health Service (Treasury)
   - Bureau of Chemistry (Agriculture)
   - Children's Bureau (Labor)
   - Division of Vital Statistics, Bureau of the Census (Commerce)
   - Medical Division, Office of Indian Affairs (Interior)
   - Division of School Hygiene, Bureau of Education (Interior)
   - Bureau of Animal Industry (Agriculture)
2. *Interest in Public Health Important, but Secondary*
   - Bureau of Home Economics (Agriculture)
   - Bureau of Mines (Commerce)
   - Bureau of Dairying (Agriculture)
   - Extension Service (Agriculture)
   - Bureau of Immigration (Labor)
   - Women's Bureau (Labor)
   - Bureau of Labor Statistics (Labor)
3. *Medical Service or Relief, or Public Health of Restricted or Special Scope.*
   - Medical Department (Army)
   - Bureau of Medicine and Surgery (Navy)
   - United States Veterans' Bureau
   - St. Elizabeth's Hospital (Interior)

Freedmen's Hospital (Interior)
Alaska Division, Bureau of Education (Interior)
United States Employees' Compensation Commission
Service Relations Division (Post Office)

4. *Public Health or Medical Work Incidental Only*
Bureau of Internal Revenue (Treasury)
Customs Service (Treasury)
Consular Service (State)
Bureau of Entomology (Agriculture)
Bureau of Public Roads (Agriculture)
Bureau of Agricultural Economics (Agriculture)
Bureau of Biological Survey (Agriculture)
Bureau of Plant Industry (Agriculture)
Office of Experiment Stations (Agriculture)
Forest Service (Agriculture)
Bureau of Fisheries (Commerce)
Bureau of Standards (Commerce)
Steamboat Inspection Service (Commerce)
Patent Office (Commerce)
Geological Survey (Interior)
National Park Service (Interior)
Bureau of Pensions (Interior)
Federal Board for Vocational Education.

It will be seen from this summation that there are seven bureaus or divisions in which public health is more or less the major activity and primary purpose of the particular agency of the government. Any plan for centralizing federal health work should consider these agencies first and provide for bringing all of them, or essential parts of them, together in one department, under unified direction, or else for effecting some form of practical liaison or coöperation between them. In 1926 these seven agencies were scattered through five different departments and, as a rule, carried on their activities independently.

The second group of agencies, those in which the public health interest is important but secondary to the general scope of the bureau, also numbers seven administrative units, representing three different executive departments. If there were a central health administration in the federal government, all other public health work, not directed by it, should be effectively coördinated with it. This might be accomplished by a system of liaison, or by contract service supplied from the central agency. The desirability for the latter arrangement has already been recognized, and Congress has authorized, or cabinet officers and bureau chiefs have

requested, the assignment of medical officers of the Public Health Service to assist in the public health work of other departments.

This form of contract or coöperative service was in 1925 in operation in the following instances, Public Health Service officers being detailed in each case:

1. Bureau of Immigration (Labor)

By an act of March 3, 1891 (26 Stat. L., 1084), surgeons of the Marine Hospital Service (now the Public Health Service) were directed to make the medical examinations of immigrants. The act of February 5, 1917 (39 Stat. L., 885), provides for detail of such officers. In 1925 there were 167 medical officers assigned to this duty.

2. Consular Service (State)

The act of February 15, 1893 (27 Stat. L., 450), authorized the President to detail medical officers to serve in the office of any consul in a foreign port. During 1925 officers of the Public Health Service were stationed in consular offices at thirty ports in Europe.

3. Office of Indian Affairs (Interior)

In 1912 the Public Health Service was authorized (37 Stat. L., 519) to make a survey of contagious and infectious diseases among the Indians. In 1918 physicians of the Service were assigned to combat influenza among the Indians. In 1925 a trachoma survey was being undertaken among the Indians by the Public Health Service at the request of the Secretary of the Interior. In 1926 the Secretary of the Interior requested the Public Health Service to aid in reorganizing the Indian Medical Service.

4. Alaska Division, Bureau of Education (Interior)

Since 1915 annual appropriation acts for medical relief in Alaska have directed the Secretary of the Interior to provide such relief "with the advice and coöperation of the Public Health Service" (38 Stat. L., 862).

5. United States Employees' Compensation Commission

The act of September 7, 1916 (39 Stat. L., 743), directed medical services for injured civil employees of the government to be furnished by United States medical officers and hospitals wherever possible. An officer of the Public Health Service has acted as medical director of the Commission.

6. Bureau of Mines (Commerce)

By an act of June 12, 1917 (40 Stat. L., 146), the Secretary of the Treasury is authorized to detail medical officers of the Public Health Service to the Bureau of Mines for coöperative health, safety, or sanitation work. In 1925, seven officers were so detailed.

7. Bureau of Chemistry (Agriculture)

An act of October 1, 1918 (40 Stat. L., 992), authorized the Secretary of the Treasury to detail medical officers of the Public Health Service to assist in the administration of the Pure Food and Drugs Act.

8. Post Office Department

At the request of the Postmaster General, the Public Health Service has since 1921 coöperated with officers of the postal service in studying sanitary conditions in postal establishments.

9. National Park Service (Interior)

At the request of the Secretary of the Interior, the Public Health Service has for several years assigned sanitary engineers and medical officers to assist in supervising public health in the national parks.

10. Miscellaneous

Since 1914 the Public Health Service has supplied medical officers for the Coast Guard (38 Stat. L., 387).

From October 6, 1917, to August 9, 1921, Public Health Service officers cared for ex-service men, and from the latter date to June 7, 1924, detailed officers to the United States Veterans' Bureau. Officers were also supplied to the Federal Board for Vocational Education.

The third class of bureaus listed above are those which are concerned only with the giving of medical relief, such as the Veterans' Bureau, which is by no means a health agency, or else carry on health work of limited, instead of general scope. Curative medicine and preventive medicine are, of course, quite different matters, and it is only with the latter that plans for coördination of public health work should deal. These eight medical relief bureaus should not, therefore, be considered for transfer, although it would be desirable to maintain close coöperative relations between them and any central federal health agency. The principle of contract service would also apply in some cases here.

The fourth class of bureaus are those whose major functions are in some field other than public health, but which carry on some activities of indirect or incidental interest to public health Thus, the Bureau of Entomology does a small amount of work on mosquitoes and other insects affecting the health of man. The Bureau of Public Roads has designed sanitary conveniences for farm homes. The question arises whether such activities or some of them should not be discontinued by the agencies with whom the work is only incidental, and assumed by the Public Health

Service or by a central federal health agency. This would be more economical and more effective. At any rate, promiscuous public health work conducted by federal bureaus which have entirely different functions should be directed by scientific personnel detailed from such a central health agency, or should be closely coördinated with the work of this agency. Otherwise, there is likely to be waste motion and even cross-purposes.

Appropriations and Personnel. In the following pages will be outlined and tabulated for purposes of comparison various items concerning the many bureaus which do public health work. A summary of appropriations and of personnel will be given, and actual duplication in activities or functions will be described. This summary is intended to point out further the need for coördination, though additional arguments or reasons for such an admittedly essential step in federal progress are almost superfluous.

Federal Appropriations for Public Health. The following appropriation figures are taken from the appropriation acts for the fiscal years 1925 and 1926. The figures have been given in considerable detail, in order to indicate the relative amounts for different purposes, and to show the comparative value placed on these activities by Congress. Everything relating directly or indirectly to public health or medical affairs has been included.

Treasury Department

Public Health Service	1925	1926
Salaries, Office of Surgeon General	$ 104,405	$ 101,560
Pay of commissioned officers	1,135,000	1,110,000
Acting assistant surgeons	300,000	315,000
Pay, all other employees	840,000	1,020,000
Travel and transportation	30,000	25,000
Hygienic Laboratory	44,600	43,400
Medical examinations	4,900,000	5,211,285
Quarantine service	479,000	470,000
Prevention of epidemics	332,910	328,772
Deficiency appropriation	....	275,000
Field investigations	275,086	282,054
Interstate quarantine	21,900	22,530
Deficiency for study of oyster pollution	....	57,600
Rural sanitation	74,300	75,000
Biologic products	41,320	45,000
Venereal Disease	149,000	75,000
Miscellaneous	3,500	3,500
Total, Public Health Service	$ 8,731,021	$ 9,460,701

	1925	1926
Supervising Architect		
National Leper Home (completion)	$ 150,000	....
Marine hospitals (work)	87,000	$122,350
Quarantine stations (work on)	34,350	255,000
Internal Revenue		
Prohibition and narcotics	10,629,770	11,000,000
Navy Department		
Care of lepers, Guam	30,000	30,000
Bureau of Medicine and Surgery	2,347,620	2,078,400
New naval hospitals	2,257,500	715,500
State Department		
International Sanitary Bureau	11,154	11,154
International Office of Public Health	3,860	3,860
Cape Town Hospital	50	50
Conference on oil pollution	....	42,000
Department of Justice		
Medical care of prisoners	22,000	22,000
Department of Commerce		
Bureau of the Census; vital statistics		
Salaries	133,000	135,000
Field	107,000	102,000
Travel	2,556	4,000
Total, Vital Statistics	$ 242,556	$ 241,000
Bureau of Fisheries		
Health on Pribiloff Islands	10,000	10,000
Department of Labor		
Children's Bureau		
Salaries	117,820	110,000
Child Welfare studies	136,080	135,000
Travel and publications	72,000	68,000
Maternity and Infancy	1,007,092	1,000,000
Total, Children's Bureau	$ 1,332,992	$ 1,313,000
Women's Bureau	107,380	105,000
Department of the Interior		
Office of Indian Affairs		
Conservation of health	500,000	700,000
Geological Survey		
Water supply investigations	170,000	165,000
Pension Office		
Fees for examining surgeons	450,000	500,000
Deficiency appropriation for same	90,000	....
Bureau of Mines [1]		
General expenses	88,000	86,000
Safety of miners	359,768	400,000
Same in Alaska	35,000	33,000
Mine rescue work	262,300	281,840
Mine rescue equipment	40,000	....
Total, Mines	$ 785,068	$ 800,840

[1] Transferred to the Department of Commerce in 1925.

	1925	1926
Bureau of Education		
School hygiene .....about	$ 15,000	$ 15,000
Medical relief, Alaska.....	110,000	122,320
Insane of Alaska.....	150,000	157,757
St. Elizabeth's Hospital		
General appropriation	900,000	910,000
Construction	320,400	113,000
D. C. appropriation	850,000	900,000
Deficiency appropriation, same.....	236,000	....
Freedmen's Hospital	174,700	202,950
Department of Agriculture		
Bureau of Animal Industry		
Salaries	670,000	649,401
Inspection and quarantine	573,000	610,000
Tuberculosis eradication	850,000	982,000
Tuberculosis indemnities	2,427,600	2,578,000
Tick eradication	660,000	699,451
Dairy investigations[2]	386,600	484,340[2]
Animal husbandry	295,440	348,225
Animal diseases	118,000	125,860
Hog cholera	404,000	431,363
Dourine studies	40,240	40,520
General	27,886	24,226
Meat inspection, extra.....	1,071,150	1,896,110
Total, Animal Industry.....	$ 7,523,916	$ 8,385,156
Meat inspection, permanent.....	3,000,000	3,000,000
Forest Service		
Sanitation and fire prevention.....	25,000	25,000
Bureau of Chemistry		
Salaries	340,000	363,208
Agricultural chemistry	120,600	123,400
Work for other departments.....	14,090	14,090
Raw materials	55,805	54,805
Syrup studies	28,370	28,000
Pure food and drugs law.....	716,260	788,860
Tea act	36,110	40,690
Insecticides and fungicides.....	29,440	27,580
Dust explosions	26,555	26,555
Naval stores	20,000	35,000
Total, Chemistry	$ 1,387,230	$ 1,502,188
Bureau of Entomology		
Insects affecting health of man or animals	64,630	66,560
Bureau of Public Roads		
Water supply, drainage, and rural engineering	35,300	?
Bureau of Home Economics		
Salaries	27,244	27,244
Investigations	79,244	90,000
	107,024	117,244

[2] In 1926 this appropriation is to the Bureau of Dairying.

	1925	1926
War Department		
Water and sewers at posts	$ 2,109,950	$ 2,450,000
Hospital construction	489,500	440,000
Medical department	942,610	1,033,633
Hospital care, Canal Zone	35,000	40,000
Army Medical Museum	7,500	7,500
Library, Surgeon General	20,000	20,000
Salaries, Office of Surgeon General	267,804	268,284
Insane Filipinos	1,900	900
Insane in Porto Rico	50	50
Citizens Military Training Camp	2,330,000	2,807,471
Medical history, World War	16,600	19,700
National Homes for Disabled Volunteer Soldiers, hospitals	1,755,500	2,132,300
Sanitation, Canal Zone	580,000	653,216
Independent Establishments		
Employees' Compensation Commission		
Salaries	136,600	138,000
General	14,000	10,000
Compensation and medical relief	2,500,000	2,150,000
	$ 2,550,600	$ 2,298,000
United States Veterans' Bureau		
General	46,790,000	45,500,000
Medical and hospital	42,000,000	35,000,000
Vocational rehabilitation	89,000,000	38,000,000
Federal Board for Vocational Education		
Salaries	200,000	200,000
Industrial rehabilitation	2,556,000	....

Summary of Appropriations for 1926

All purposes, including public health, sanitation, medical relief, rehabilitation, care of insane, hospital construction, narcotic control, etc. ..... about $131,000,000
Medical relief and hospital service only ..... about $ 48,000,000
Public health work ..... about $ 16,000,000
Public health work, exclusive of meat inspection ..... about $ 11,600,000
Annual federal budget ..... about $3,267,000,000
Per cent expended on public health ..... about 0.5 per cent.
Per cent expended on medical relief ..... about 1.5 per cent.

The Bureau of the Budget estimates that $12,593,341.29 is the amount of federal appropriation for the promotion of public

health for the fiscal year 1926.[3] This figure differs from the estimate of the author due to the fact that the Bureau of the Budget has considered only part of the activities which are concerned with national public health and also because it has mixed medical relief with preventive work. The items included for health in its functional classification are:

Interdepartmental Social Hygiene Board
International Sanitary Bureau
International Office of Public Health
International Congress against Alcoholism
Bureau of the Public Health Service
St. Elizabeth's Hospital
Freedmen's Hospital
Enforcement of Pure Food and Drugs Laws
Meat Inspection
Division of Vital Statistics, Bureau of Census
Children's Bureau

This is obviously an incomplete and in some respects erroneous classification; as far as the promotion of health is concerned.

Federal Personnel on Health Work. The following figures show the number of Federal workers engaged on medical and public health activities. The data are in some cases approximate, as personnel changes radically from time to time, and in certain instances the number is estimated.

Treasury Department	
Public Health Service	
Commissioned medical officers	203
Acting assistant surgeons	477
Other medical personnel	291
Other scientific personnel	582
Other employees	2,925
Total	4,478
Bureau of Internal Revenue	
Narcotic agents	164
Department of Agriculture	
Bureau of Chemistry	
Scientific (chemists, engineers, bacteriologists, microscopists, and inspectors)	300
Other employees	300

[3] Message of the President transmitting the Budget for the fiscal year 1926, page A54.

Bureau of Animal Industry	
Scientific (veterinarians, microscopists, inspectors, etc.)	3,000
Other employees	1,000
Bureau of Home Economics	
Scientific personnel	20
Other employees	20
Bureau of Dairying	
Scientific personnel	120
Other employees	50
Bureau of Entomology	
Scientific personnel	6
Other employees	15
Department of Labor	
Children's Bureau	
Physicians	5
Other scientific personnel	55
Other employees	76
	136
Women's Bureau	
Scientific personnel	19
Other employees	27
Bureau of Labor Statistics	3
Department of the Interior	
Office of Indian Affairs, Medical Division	
Physicians	[4] 218
Other scientific personnel	202
Division of School Hygiene, Bureau of Education	
Physician	1
Other personnel	5
St. Elizabeth's Hospital	
Physicians	57
Other employees	1,200
Alaska Division, Bureau of Education	
Physicians	8
Other personnel	35
Department of Commerce	
Division of Vital Statistics, Bureau of the Census	
Total personnel (mostly clerical)	69
Bureau of Mines	
Safety and sanitation work	100
Department of War	
Medical Department	
Medical Corps	935
Dental Corps	158
Army Nurse Corps	675
Veterinary Corps	126
Medical Administrative Corps	72
Enlisted men	7,000
Other employees	1,600

[4] Including fifty contract physicians.

Department of the Navy	
Medical Corps	800
Dental Corps	150
Nurse Corps	500
Hospital Corps	5,000
Other employees	45
Miscellaneous	
U. S. Veterans' Bureau	
Physicians and dentists	2,125
Nurses	1,660
Dietitians	138
Physiotherapy experts	206
Occupational therapy	366
	4,495

SUMMARY

Total physicians in Government Service[5]	about	4,500
Physicians actually doing public health work	about	350
Scientific (non-medical) personnel engaged directly or indirectly upon health and medical work	about	10,000
Scientific (non-medical) personnel, exclusive of Army, Navy, Veterans' Bureau	about	6,000
Medical and Scientific personnel on federal health and medical work	about	15,000
Non-professional employees on health or medical work	about	14,500
Non-professional employees, exclusive of Army, Navy, and St. Elizabeth's	about	2,000
Grand total, medical, scientific and non-professional	about	30,000
Grand total actually concerned with public health	estimated about	5,000

[5] Not including contract physicians with the Bureau of Pensions, Employees' Compensation Commission, and other bureaus.

CHAPTER XVI

DUPLICATION IN FEDERAL HEALTH WORK

When it is considered that there are some forty different Federal bureaus which are directly or indirectly interested in some phase of public health, some duplication of functions and activities is naturally to be expected. Such duplication is not particularly extensive, however, nor, as a rule, is it serious where it does occur. The field is so vast and there is so much to be done, that the more accomplished to promote national vitality, the better. On the other hand, there is considerable overlapping, and, what is of equal significance, there are some gaps. Efficiency would be promoted if there could be concentration, with the use of greater resources, by several bureaus on one particular problem, instead of independent activities on different propositions.

The actual overlapping of certain functions will be briefly described in the following pages.

Maternal and Child Hygiene. Maternal and child hygiene activities, that is, efforts to conserve and promote the health of mothers before, during, and after confinement, and of infants and children up to school age, are now conducted directly by the Public Health Service (Treasury), the Children's Bureau (Labor), the Bureau of Home Economics (Agriculture), the Extension Service (Agriculture), and the Federal Board for Vocational Education, and indirectly by a number of other bureaus. Statistics on births, infant mortality, and other subjects of significance to child hygiene are collected and compiled by the Division of Vital Statistics of the Bureau of the Census (Commerce).

In his admirable historical account of child welfare in the United States,[1] Dr. Philip Van Ingen lists seven events as milestones in the development of this type of work. They are:

[1] In a half century of public health, p. 290. American Public Health Association (1921).

1. The publication, in 1906, by the Census Bureau, of the Mortality Statistics for the five years 1900-1904. . . . "It was these accurate and systematic statistics from the Census Bureau which first called the attention of the country at large to the appalling loss of human life during infancy and childhood."

2. Establishment in New York City, in 1908, of the Division of Child Hygiene.

3. The Conference on Prevention of Infant Mortality, called by the American Academy of Medicine in New Haven in 1909.

4. The formation of the Federal Children's Bureau in 1912. "This was the recognition by the Federal Government of the rights of the child and the advisability of special machinery to study and protect him. It was more than that, for it was an important step in arousing the interest and activity of the lay public in meeting a situation which had been considered to be the function and responsibility of the medical profession."

5. The establishment of the Division of Child Hygiene in the New York State Department of Health.

6. The establishment of the Birth Registration Area and the publication of birth statistics for 1916 (by the United States Bureau of the Census). "For the first time birth statistics, on which are based all infant mortality rates, were available for a considerable area and were compiled in a uniform manner."

7. The formation, in March, 1920, of the National Child Health Council and, in December of the same year, of the National Health Council.

In 1908 the Public Health Service conducted studies of milk in relation to public health and published the results in a monograph of 750 pages,[2] much of which was devoted to the place in milk in the health of children. In 1912 the service made extensive surveys of trachoma among children, and since 1915 it has done much school hygiene work.[3] The service has had a section on child hygiene in its Division of Scientific Research for some years, in the charge of a surgeon of the medical corps. About $60,000 a year is allotted to this work. In 1918 a program of child conservation was formulated by the service,[4] and in 1924 child hygiene activities were being conducted in twenty-one states and the Dis-

[2] Hygienic Laboratory Bulletin No. 41.

[3] See Clark, T., Child hygiene activities of the Public Health Service. Public Health Service, Reprint No. 723 (1922).

[4] Clark, T., The plans of the United States Public Health Service. American Association for Study and Prevention of Infant Mortality, Transactions, 1918.

trict of Columbia,[5] though much of it pertained to school hygiene rather than to infant welfare. Many pamphlets and bulletins on the subject have been issued by the Service.[6]

Both the Public Health Service and the Children's Bureau are in close touch with state departments of health regarding child hygiene work. The latter bureau is charged with the administration of the Federal Maternity and Infancy Act, though the Surgeon General of the Public Health Service is one of the three members of the Federal Maternity and Infancy Board.[7] When hearings were held in July of 1921, on this proposed law, representatives of the Public Health Service and other witnesses advocated that the administration of the law should be under the Public Health Service. Although testimony at congressional hearings is often of doubtful value, one quotation may be of interest, as it comes from one of the then Assistant Surgeons General of the Public Health Service, Dr. J. W. Schereschewsky. He said:[8]

> The Public Health Service and the Children's Bureau are doing identical work. In other words, I know the Children's Bureau has relations with the State departments in child hygiene and so have we. Both of us try to help them out. We are Government servants here and the Government serves the public.

He was asked, "Should we, if we could eliminate that duplication, put it all into the hands of one service?" and answered:

> "If you want to be logical, I would say that all health matters should be under the direct charge of one Government agency; in the interests of efficiency no other answer is possible. Of course, Congress in its wisdom will do exactly as it wants to in regards to that matter."

Congress in its wisdom did not see fit, shortly thereafter, to entrust the administration of the maternity and infancy act of November 23, 1921 (42 Stat. L., 224), to the Public Health Service.[9]

[5] Surgeon General, Annual Report, 1924, p. 37.

[6] See Child hygiene and related publications issued by the Public Health Service, Reprint No. 960 (1924). Lists eighty-six pamphlets or bulletins.

[7] See page 242.

[8] House Committee on Interstate and Foreign Commerce. Hearing on public protection of maternity and infancy. 67 Cong., p. 199 (1921).

[9] See page 242.

The work of the Department of Agriculture on child hygiene has consisted in the conduct of a number of studies on nutritional problems,[10] and the extension work done by home demonstration agents in rural regions.[11] The Federal Board for Vocational Education, with the coöperation of the Children's Bureau, has issued a bulletin on "Child care and child welfare,"[12] and through its home economics education service has stimulated interest in this subject. At one time (1913) the Home Education Division of the Bureau of Education was advising mothers on the care of babies, but this service seems to have been discontinued.

"From being a neglected, almost friendless member of society fifty years ago," writes Dr. Van Ingen, "the child today occupies the center of the stage. Every period of his existence is being studied and the best intelligence in the world is busy in trying to secure for him conditions and opportunities which will render him an efficient, healthy, full grown member of society." This seems to be true with respect to the federal government.

Child hygiene is an integral part of the whole public health movement. It cannot be separate from public health as a whole The child may be a unit, but public health is a more important unit. The infant mortality rate has declined with the general death rate and partly as a result of that decrease. Maternal and child hygiene activities should form a part of a central, unified program of federal health work.

School Hygiene. Activities in the interest of the health of the child of school age are now conducted by the Public Health Service (Treasury), the Bureau of Education (Interior), and the Bureau of Home Economics (Agriculture). Between the first two agencies named, there is considerable overlapping of functions, if not, perhaps, of actual operation. The Division of School Hygiene of the Bureau of Education, created in 1911, has conducted studies and issued pamphlets on many phases of school health work. The Public Health Service began epidemiological studies in schools in 1912,

[10] As, Food for young children, Farmer's Bulletin No. 717 (1920).

[11] See Stanley, L., The contribution of the home demonstration agent to health, support and education for mothers, babies, and younger children in rural communities. American Child Health Association, Transactions, 1924.

[12] No. 65 (1919).

and has been making investigations of school hygiene ever since. Each of these agencies has published about fifty pamphlets on school hygiene or sanitation. Thus we find:

Nutrition and Education. Reprint No. 798 of the Public Health Service;
School Lunches. Farmer's Bulletin No. 712, prepared by the Bureau of Home Economics;
Diet for the School Child. Health Education Series No. 2, of the Bureau of Education.

Apropos of these bulletins on school lunches, the late H. C. Wallace, Secretary of Agriculture, told the Joint Committee on Reorganization that "Often what seems to be duplication is not duplication at all. I can give you an illustration of that in this way. We put out a bulletin on school lunches for country children. The question was raised as to whether that was not a duplication of a bulletin put out by another department on school lunches, and we had a great time discussing as to whether one of them should not be eliminated. As a matter of fact, it is not a duplication at all. One is directed to city children and the other to country children. One has circulation in the country and the other has circulation in the city. Yet there are people who hold up these two bulletins and say that duplication is going on in the service and that is a waste of the Government's money. There may be a duplication in the printing even and yet not a duplication in the circulation."

In spite of Mr. Wallace's attempt to justify this duplication, it is still a duplication. The overlapping occurred in the preparation. One agency could have prepared one pamphlet applicable to school lunches. They are the same and have the same fundamental requirements whether eaten in rural or urban environments. One pamphlet could be circulated in both city and country schools. There is actual duplication here and it is the kind of thing which could be avoided by more effective correlation of health interests.

The difference between the school hygiene work of the Public Health Service and the Division of School Hygiene of the Bureau of Education is that the former makes field investigations of physical development, oral hygiene, and similar matters among school children, while the latter develops instructive material for the guidance of health promotion among children in school. A bill proposed in 1921 for federal aid to physical education in the states con-

tained a clause establishing a Division of Child Hygiene in the Public Health Service, but Congress did not pass this measure.

Foods and Nutrition. Studies of human nutrition are conducted by the Bureau of Home Economics (Agriculture), the Bureau of Chemistry (Agriculture), the Bureau of Animal Industry (Agriculture), the Bureau of Fisheries (Commerce), and the Public Health Service (Treasury). All these agencies issue pamphlets regarding the care and use of food, and additional material is put out by the Children's Bureau (Labor), the Bureau of Education (Interior), the Bureau of Dairying (Agriculture), and the Federal Board for Vocational Education. The Bureaus of Chemistry, Animal Industry, and Agricultural Economics of the Department of Agriculture do regulatory work on foods shipped in interstate commerce, while the Customs Service (Treasury) coöperates in the regulation of food offered for entry into this country.

A selected list of government publications on foods and nutrition, compiled at the Bureau of Home Economics, contains references to nearly two hundred publications on subjects pertaining to nutrition.[13] About a dozen bureaus, divisions, offices, boards, or commissions are responsible for the production of these useful bulletins. The list of government publications on foods and cooking, issued by the Superintendent of Documents, contains over three hundred titles.

Milk control offers a good example of duplication of effort. Both the Public Health Service and the Bureau of Dairying are conducting activities for the sanitation of milk.[14] Several bureaus have issued educational pamphlets on the use of milk, as, for instance:

Milk: The indispensable food for children (1918). Bur. Publ. 35. Children's Bureau.
Milk and our school children. Health Educ. Series No. 11 (1922). Bureau of Education.
Safe milk, an important food problem. Supp. No. 31 (1917). Public Health Service.
Milk and its uses in the home. Farmer's Bulletin No. 1359 (1923). Department of Agriculture.

[13] Van Deman, R., Selected list of government publications on foods and nutrition (January, 1925).

[14] See Frank, L. C., A statewide milk sanitation program. Public Health Service, Reprint No. 971 (1924); also: Kelly, E., Production of clean milk. Department of Agriculture, Farmer's Bulletin No. 602 (1923).

The list of Government publications on animal industry issued by the Superintendent of Documents enumerates fifty different pamphlets or bulletins regarding milk, and this list is not a complete one.

A few years ago, the Committee on Milk Supply of the Sanitary Engineering Section of the American Public Health Association wrote to four different departments of the Government asking whether they had officially defined pasteurization of milk. Three, the Public Health Service, the Department of Agriculture, and the Navy Department, replied, and the remarkable fact appeared that all of the definitions were different. Why should this be?

In this various food work, there is some line of demarcation. Thus, the Bureau of Fisheries is concerned only with sea food, the Bureau of Animal Industry only with meat, the Bureau of Dairying only with dairy products, the Public Health Service with food in relation to health and disease, the Children's Bureau with the nutrition of children, the Bureau of Home Economics with food and nutrition in relation to home economics, and the Bureau of Chemistry with food research corollary to the enforcement of the pure food and drugs law. Yet it all has to do with the improvement of human health.

The importance of food control to the public health is well brought out in an article on the extent of federal rural sanitation efforts, written by an officer of the Public Health Service. In Public Health Reports for October 23, 1925 (page 2255), he says, "The sanitary quality of the tremendous volume of raw foods now shipped daily through interstate traffic from our rural districts to our cities has an obviously important bearing on urban health, and, in view of the interstate feature, is a matter with which our federal government is to some extent concerned." It is not unreasonable to suppose that a correlation of these several government nutritional interests might conduce to more effective results in the production of scientific information on nutritional hygiene.

Industrial Hygiene. Industrial hygiene activities are conducted by the Public Health Service (Treasury), Bureau of Mines (Commerce), Bureau of Labor Statistics (Labor), Children's Bureau (Labor), Women's Bureau (Labor), Bureau of Standards (Com-

merce), and the War, Navy, and Post Office Departments.[15] The Public Health Service, using about $100,000 a year for the purpose, studies physical conditions in commercial plants, and also the factors influencing morbidity among industrial workers generally. The Bureau of Mines studies methods for improving the health and safety of miners. The Bureau of Labor Statistics was the pioneer among the federal bureaus in making investigations of occupational diseases and still continues such studies. The Children's Bureau and the Women's Bureau are interested in the health of working children and women, respectively. The Bureau of Standards is working on safety codes to prevent accidents, while the War, Navy, and Post Office Departments, as the largest employers of skilled labor in the Government, endeavor to provide safe working conditions for their employees. The Post Office Department has the coöperation of the Public Health Service in this regard.

Although the functions of each of these bureaus seem to be well delimited, there is some overlapping. Thus studies have been made and publications produced on carbon monoxide poisoning by the Public Health Service, the Bureau of Mines, and the Bureau of Labor Statistics, as follows:

Carbon monoxide poisoning in closed garages. Reprint No. 694 (1921). Public Health Service.
Vitiation of garage air by automobile exhaust gases. Tech. Paper 216 (1919). Bureau of Mines.
Carbon monoxide poisoning. Bulletin 291 (1921). Bureau of Labor Statistics.

More recently such studies as have been made on carbon monoxide and allied problems by the Bureau of Mines have been under the direction of the officer detailed from the Public Health Service. The Public Health Service has recently been making studies on the effect of radioactive substances on workers at the Bureau of Standards. In 1925 the Bureau of Labor Statistics had a completed study, not yet ready for print, on the effects of radioactive substances on the health of workers. The value of having as much information as possible, from as many sources as possible

[15] See Bean, W. S., The Rôle of the Federal Government in Promoting Industrial Hygiene. American Journal of Public Health, July, 1925.

on this and other industrial hygiene topics is apparent. Coördination of efforts might, however, be a means of enhancing the value of these investigations.

Sanitary Engineering. Sanitary engineering is conducted by the Public Health Service (Treasury), the Geological Survey (Interior), the Bureau of Public Roads (Agriculture), the Army, the Bureau of Entomology (Agriculture), and by various other bureaus, the extent depending upon what is considered to be the domain of sanitary engineering. It encompasses, in fact, all engineering activities which affect human health by the control of environmental conditions.

The Public Health Service, with a personnel of about thirty well-trained, graduate sanitary engineers, is the chief agency concerned with this essential branch of public health. All other sanitary engineering of the government should be performed by, directed by, or coördinated with that of the Public Health Service. Dairy sanitation, for instance, is more of an engineering problem that a veterinary or a chemical one.

The Geological Survey is concerned only with water resources in a general engineering way, and so there is no conflict here. The Bureau of Public Roads is the engineering office of the Department of Agriculture, and has designed sanitary conveniences for farm homes, a subject frequently considered by the Public Health Service. This is one example of an entirely unnecessary duplication. The Bureau of Entomology is conducting experiments on mosquito control, and the Bureau of Biological Survey, on rodent control, both subjects being also covered by the Public Health Service, though the duplication here is not serious and is one of function and not operation.[16] The chief of the Bureau of Entomology is supposed to be consulting entomologist for the Public Health Service, though the consultations are said to have been extremely rare.

Rural Hygiene. Health promotion in rural areas is sponsored by the Children's Bureau (Labor), the Public Health Service

[16] Out of about one hundred government publications on malaria, the majority come from the Public Health Service. See, Some facts about malaria, Farmer's Bulletin 450 (1911, revised 1924); and What the farmer can do to prevent malaria, Public Health Service, Supp. 11 (1914.

See also, Insects, Price List 41, and Price List 39, Birds and wild animals. Superintendent of Documents.

(Treasury), the Extension Service (Agriculture), and the Federal Board for Vocational Education. The Children's Bureau, under the Federal Maternity and Infancy Act, is endeavoring to see that mothers and infants in rural districts get the same health advantages that those in the cities have. The Public Health Service received for 1926, an appropriation of $75,000 for rural sanitation, which cannot be used for demonstration purposes in the states unless the state, county, or municipality agrees to pay half the expense of such work (43 Stat. L., 775). In the fiscal year 1925 the Service coöperated in demonstration projects in seventy-nine counties, or districts comparable to counties, in nineteen states.[17]

The Extension Service of the Department of Agriculture has nearly one thousand home demonstration agents and about two thousand persons engaged in county agent work. Promotion of rural health is considered one of the many proper functions of these workers, and all reports are replete with data as to improved sanitary practices brought about by these agents.[18] The Federal Board for Vocational Education administers the expenditure of large Federal subsidies for agricultural education.

Rural hygiene is an important element in public health and there is a vast amount of effort needed along these lines. More effective results would, nevertheless, be achieved by coördinated activities.

Tuberculosis. Tuberculosis control work, either actual operation or study, is undertaken by the Public Health Service (Treasury), the Bureau of Animal Industry (Agriculture), the United States Veterans' Bureau, the Office of Indian Affairs (Interior), the Bureau of Labor Statistics (Labor), the Bureau of Mines (Commerce), the Army and the Navy, the Bureau of Chemistry (Agriculture), the Post Office Department, and a few other organizations. With the Army, Navy, Veterans' Bureau, and Office of Indian Affairs, this work is concerned with the persons coming under the special jurisdiction of these departments. Likewise, the studies of the Bureau of Mines have been concerned with miners' phthisis. The investigations of the Bureau of Labor Statistics have had to do with the effects of dust on workers. The Bureau of Animal

[17] See Lumsden, L. L., Coöperative rural health work of the Public Health Service in the Fiscal Year 1925. Public Health Reports, October 23, 1925.
[18] See Department of Agriculture, Coöperative extension work, 1923.

Industry gets an annual appropriation of nearly a million dollars for eradication of tuberculosis in animals, and another two and a half million for indemnities. The Bureau of Chemistry analyzes so-called consumption cures and either that bureau or the Post Office Department sets in motion prosecuting machinery against frauds. Tuberculosis cures are also analyzed and tested by the Hygienic Laboratory of the Public Health Service, and the Service is interested in the general problems of the disease. There is, as a matter of fact, not much duplication here, although coöperative efforts would be desirable.

Mental Hygiene. Mental hygiene work, psychiatry, and other analogous subjects are considered by the Children's Bureau (Labor), Public Health Service (Treasury), St. Elizabeth's, the Government Hospital for the Insane (Interior), the United States Veterans' Bureau, and more or less indirectly by some other bureaus. The Bureau of Home Economics, for instance, is making a study of the psychology of child feeding.[19] St. Elizabeth's is not only a relief institution, but also a valuable laboratory for mental hygiene studies. The only instance of direct collaboration between the Children's Bureau and the Public Health Service was on studies of mentally defective children in the District of Columbia (1914) and in Delaware, and on psychiatric studies of delinquent girls (1919). The Public Health Service has made a number of other studies and issued several pamphlets on mental deficiency. The service also makes the mental examinations of arriving immigrants.

Statistics.[20] Statistics relating to various phases of public health are collected, compiled, and analyzed by a number of different bureaus. Thus, birth and mortality data for the United States are obtained by the Division of Vital Statistics of the Bureau of the Census (Commerce); morbidity reports are collected and published by the Public Health Service (Treasury), which has also issued a reprint annually since 1912, giving the mortality from certain communicable diseases; statistics on infant mortality and children are assembled by the Children's Bureau (Labor); industrial accident

[19] Department of Agriculture, *Official Record*. November 4, 1925.

[20] See Schmeckebier, Statistical work of the National Government (1925). Institute for Government Research.

data are gathered by the Bureau of Labor Statistics (Labor), except in the case of mine and quarry accidents, data for which are compiled by the Bureau of Mines (Commerce); and railroad accidents, by the Interstate Commerce Commission. The Bureau of the Census has also collected and published statistics on the insane and feeble-minded, and on hospitals. The Army, Navy and Veterans' Bureau have their own statistical services, as do a number of other agencies interested in public health. The Army's report on the results of the draft examinations constitutes the only national data on physical defects of the male population.

Statistics are ancillary to the work of any bureau, no matter what its particular function may be. Thus it is entirely proper and logical that the Children's Bureau should be concerned with statistics on infant mortality, so long as the bureau is charged by law with the duty of investigating that subject. Vital statistics, however, are the bookkeeping of public health. Because the data are so essential to an adequate conception of general conditions of national vitality, they should be collected by a central federal health agency.

If any further argument were needed for such a transfer, it can be found in the annual report of the Director of the Census for the fiscal year 1925. On page 11 of this report occurs the following significant statement (italics ours):

> The annual mortality statistics give the number of deaths from each cause in each locality, and thus make it possible to measure the toll exacted by each cause of death from year to year. *Such figures serve as the foundation of public health work.* They indicate to the public health officer the most promising direction for the expenditure of funds appropriated for such work, and they clearly show what degrees of success have attended the campaigns for better health in former years.

No better reason for the collection of vital statistics by a central health agency could be given than this dictum from the Director of the bureau now responsible for such collection.

Drug Control. The control or investigation of various kinds of drugs is the concern of the Bureau of Chemistry (Agriculture), the Public Health Service (Treasury), the Internal Revenue Office (Treasury), the Federal Narcotics Control Board, and the Bureau of Plant Industry (Agriculture). In addition, the Patent Office

(Commerce) issues patents and trade-marks for medicines and drugs, and the Customs Service (Treasury) coöperates in the control of drugs and narcotics. The last named drugs are regulated by the Internal Revenue Office, though the Public Health Service has conducted a number of studies on narcotics. The Bureau of Plant Industry, as a more or less incidental activity, explores for and studies medicinal plants.

Publications.[21] Every federal agency interested in any way with the public health has issued pamphlets and bulletins on some aspect of the subject. Many of these have been indicated in various places in this book. The total number of government health publications is somewhat astounding. The latest list of publications[22] on health, diseases, drugs, and sanitation, issued by the Superintendent of Documents, contains the titles of over 1200 different pamphlets and this is not all that there are. There are forty different classes of pamphlets included, that is, such series as the Farmer's Bulletins, Reprints from the Public Health Reports, Health Education Series, etc.

The quantity of different classes of pamphlets on health is summarized below though this tabulation is not complete, as additional bulletins have appeared and are constantly appearing subsequent to the dates of the catalogs consulted. Not all the different bureaus are included in this tabulation, but only the more prominent ones.

FEDERAL PUBLICATIONS ON HEALTH

1. *Public Health Service*[23]	
Public health bulletins	142
Venereal disease bulletins	74
Bulletins of the Hygienic Laboratory	138
Yellow-fever Institute bulletins	17
Reprints from the Public Health Reports	897
Supplements to the Public Health Reports	44
Keep Well Series	13
Miscellaneous publications	28
	1,353

[21] See Schmeckebier, The Government Printing Office. Institute for Government Research, Service Monograph No. 36 (1925).

[22] Price List No. 51.

[23] List of May, 1924.

2. *Children's Bureau*[24]

General child welfare	21
Bulletins for mothers	6
Child hygiene	28
Maternal and infant hygiene	39
Maternal and infant mortality	18
Rural child welfare	17
Mental defect	8
Total of 167, less 91 on non-health and duplications	76

3. *Bureau of Labor Statistics*[25]

Bulletins on industrial hygiene	50

4. *Women's Bureau*[26]

Bulletins on health of working women	2

5. *Department of Agriculture*[26]

Department bulletins	34
Department circulars	14
Farmer's bulletins	35
Year book separates	5
	88

6. *Bureau of Education*[27]

Bulletins	11
Health Education Series	16
School health studies	6
Miscellaneous	4
	37

7. *Bureau of Mines*[28]

Bulletins	5
Technical papers	21
Miners' circulars	6
Miscellaneous	4
	36

8. *Office of Indian Affairs*

Health pamphlets	5

9. *Geological Survey*

Water-supply papers on sanitary engineering	17

10. *Bureau of the Census*

Vital statistics	13
Miscellaneous	18
	31

[24] List of April 15, 1925.
[25] List of December 1, 1924.
[26] List of October, 1924.
[27] List of September, 1924.
[28] List of July, 1924.

11. *Bureau of Standards*
Miscellaneous, safety, etc. 4

Total about 1,700

The distribution of these health pamphlets is tremendous. Over three million copies of one pamphlet alone, "Infant care," issued by the Children's Bureau, have been sent out. During 1924, the Children's Bureau distributed 1,345,862 copies of all its publications, of which nearly half were on the care of children. The Health Education Series of the Bureau of Education has also been popular, and has been printed in the past in editions of a million each. The Public Health Service distributes annually about half a million copies of its general publications (527,614 in 1924) and about a million (1,230,811 in 1924) on venereal diseases. The Public Health Service adds about one hundred new pamphlets or reprints each year to its available supply. The Farmer's Bulletins and other publications of the Department of Agriculture are also in great demand.

During the fiscal year 1924 government publications sold numbered 7,244,727, while those distributed free by various departments amounted to 48,528,418, a grand total of 55,773,145. Just what proportion of these were on the subject of health, is difficult to state, though the Children's Bureau and the Public Health Service together distributed about three million, so that five million Federal health pamphlets a year is a conservative estimate of present distribution. The number has been much greater in the past. In 1920, for instance, the Public Health Service alone distributed about eighteen million pamphlets, half of them on the venereal diseases.

The question has been raised as to whether a more efficient concentration of effort regarding government health pamphlets might not be conducive to better quality and more effective distribution.[29] There are many people to be reached, however, and different bureaus often have different clienteles. A reasonable coördination in the matter of production of these health pamphlets would undeniably be somewhat worthwhile, and undoubtedly it would also be economical.

[29] See editorial, Pamphleteering and public health, *American Journal of Public Health*, February, 1922, p. 148.

Periodicals. A number of bureaus issue periodicals which are concerned entirely with public health or medicine, or else carry articles on health subjects. The most valuable of these to sanitarians is Public Health Reports, issued weekly by the Public Health Service. It contains technical articles, statistics, and other useful and essential information. The principal current publications are as follows:

Public Health Reports. Weekly. Public Health Service.
Naval Medical Bulletin. Monthly. Bureau of Medicine and Surgery, Navy Department.
United States Veterans' Bureau Medical Bulletin. Monthly.
Monthly Labor Review. Bureau of Labor Statistics.
Weekly News Summary. Mimeographed. Children's Bureau.
Official Record. Weekly. Department of Agriculture.
School Life. Monthly. Bureau of Education.
Experiment Station Record. Monthly. Department of Agriculture.
Weekly reports. Mimeographed. Division of Vital Statistics, Bureau of the Census.
Service and regulatory announcements (food and drugs). Department of Agriculture.

General Comment. In the preceding pages there have been set forth a number of instances of actual or apparent duplication of effort in federal public health activities. Many other specific examples of overlapping could be cited, though most of them would be of minor importance. The descriptions of each bureau given in the preceding part of this book indicate in greater detail the instances of overlapping. It is worth repeating that the field of public health is vast, that the need for many efforts is great, and that even with the activities now undertaken, the whole field is inadequately covered. Duplication is, therefore, not particularly serious, but the elimination of such as there is would, nevertheless, add something to the efficacy of national public health endeavor. If Congress should suddenly see fit to grant ten times as much financial assistance to Federal health activities as is now the case, duplication would be more apparent and more troublesome and there would be no question of the advisability of unification of health work. Coördination under present conditions would mean more and better production for every dollar spent. Efficiency in production is to be desired under any circumstances, but especially when budgets are restricted.

PART III

THE CORRELATION OF FEDERAL HEALTH ACTIVITIES

CHAPTER XVII

PREVIOUS ATTEMPTS

As federal health activities have increased in importance and scope during the last century or so, suggestions have frequently been made that they should be correlated. Such expressions began some fifty years ago and have been growing in intensity ever since. Every President from Cleveland on has advocated a better arrangement of national health work, and many proposals to this end have been made. Several definite campaigns for a national bureau of health have been undertaken, though without achieving the results sought. The story of these attempts and the narrative of the consideration given to the subject in the past are essential to the present discussion of this important matter, for the experience and lessons of the past often have a significant influence on the movements and programs of the present.

The National Board of Health.[1] The first serious endeavor to unify federal health work was the creation in 1879 of a National Board of Health. This board, however, was brought into being not so much in order to centralize health activities as to provide an effective administrative organization for dealing with a disastrous epidemic of yellow fever prevalent at the time. Sanitary legislation of national scope was, in fact, usually the result of the panics caused by epidemics. The early quarantine legislation was always induced by the inability of the states to cope with the devastation of disease, though Congress hesitated for many years before pass-

[1] See Part I, Chapter IV, page 33, for a more complete description of this board and its work.

ing a really comprehensive national quarantine act. It did not do so until 1893,[2] though there had been a partially effective law in 1878.

The National Board of Health was created by an act of March 3, 1879 (20 Stat. L., 484), but this law merely charged the board with obtaining information on all matters affecting the public health and giving advice regarding national vitality. The board was also directed to report to Congress at its next session, a plan for a national public health organization, to be prepared after a consultation with the principal sanitary organizations and the sanitarians of the several states. The duties of the board were greatly enlarged on June 2, 1879, by an act (21 Stat. L., 5) to prevent the introduction of contagious or infectious diseases into the United States. This law authorized the board to coöperate with and so far as it lawfully could, to aid state and municipal boards of health in the execution and enforcement of quarantine; and also to make such rules and regulations as were permitted by federal laws for the enforcement of maritime quarantine.

Various other duties were given to the board, chiefly of an investigatory nature, and little opportunity for administrative effort was offered. The board began operations in 1879, and during the next few years conducted a number of useful investigations. Its quarantine activities brought it into conflict with some state authorities and with those whose commercial interests ran counter to activities for the public health. In 1882, when the danger from epidemics had somewhat subsided, Congress restricted the duties of the board to the investigation of yellow fever, cholera, and smallpox (22 Stat. L., 315). The board held no meetings after 1884, and received no appropriations after that time. In 1893 the law which had created it was repealed (27 Stat. L., 452), and a new and extensive national quarantine act (27 Stat. L., 449) was passed, charging the Marine Hospital (now the Public Health) Service with its enforcement. An unsuccessful attempt was made in 1899 to revive the National Board of Health.

President Cleveland's Recommendation. In 1884 Grover Cleveland, who was serving his first term as President, urged Congress to create a national board of health or similar instrumentality,[3] but Congress did not act on the recommendation.

[2] See page 90.
[3] See Chapter III, page 24.

Federal health activities continued to be scattered throughout several departments of the government. The diversity of interests was well brought out in a paper written by Professor James W. Garner in 1905.[4] In describing these activities of twenty years ago, the author said:

There is hardly a department of the government which does not exercise functions either directly or indirectly in aid of the public health, mainly by contributing to our knowledge of sanitary science, but sometimes by other means. Thus, the Interior Department, through the Hydrographic office, studies the question of a wholesome water supply, and through the Bureau of Education it publishes reports on schools, hygiene, and similar subjects. The Department of Commerce and Labor through the Bureau of Labor conducts investigations into the condition of slums, housing of the working people, the factory system, etc., and sends broadcast printed reports of such investigations. The Navy Department through its Bureau of Medicine and Surgery maintains a medical school of research and instruction for its officers. The War Department maintains a somewhat similar school, and through its corps of sanitary engineers render valuable service towards the sanitary rehabilitation of communities governed by the military authorities. Its work in Havana at the close of the war with Spain and its services in Panama at the present time are notable examples. The work of the State Department in requiring consuls to furnish bills of health and make reports on the sanitary conditions of the ports at which they reside, as well as that of the Treasury Department through the Marine Hospital Service, has already been described. The Agricultural Department, through the Bureau of Chemistry, the Bureau of Animal Industry, and the Weather Bureau, renders valuable service in the interest of the public health. Through the Division of Foods in the former bureau the pure food legislation is enforced, and investigations into the character of food preservatives and adulterations are conducted, while through the Bureau of Animal Industry, with its more than 1400 employees, the meat inspection laws are executed, and investigations into the existence of contagious diseases in animals used for human food are carried on. With the possible exception, therefore, of the Postoffice Department and the Department of Justice, all of the departments of the national government are at present conducting lines of activity which relate directly or indirectly to the promotion of the public health.

[4] Garner, Federal activity in the interest of the public health, *Yale Review*, August, 1905.

The Committee of One Hundred. A proposal that these existing Federal health agencies should be brought together to form a central health department was contained in a notable paper in 1906, read by J. Pease Norton, Ph. D., before the Economic Section of the American Association for the Advancement of Science. The paper met with enthusiastic approval in the Association, and as a result there was appointed a Committee of One Hundred on National Health, comprising sociologists, economists, philanthropists, sanitarians, educators, clergymen, city health officers, state health officers, and members of the medical profession.[5] This committee worked out a plan for the construction of a national health department, and for several years carried on a very active campaign to this end.

In 1908 President Roosevelt called a White House conference to consider national conservation. One of the many results of this conference was the development of a remarkable report on national vitality,[6] prepared for the National Conservation Commission by Professor Irving Fisher, one of its members, who was also chairman of the Committee of One Hundred. In this report of 130 pages were summarized and explained data for the United States on the existing span of life, the prevalence of disease and physical deficiency, the conservation of life, and its prolongation. The report recommended, among other things, that "the existing health agencies of the Government should be concentrated in one department, better coördinated, and given more powers and appropriations."

Both of the major political parties took cognizance of this movement in 1908, and included planks regarding it in their platforms. The Republican platform said, "We commend the efforts designed to secure greater efficiency in national public-health agencies and favor such legislation as will effect this purpose." The Democratic platform, with the approval of the late William J. Bryan, went even further, saying, "We advocate the organization of all existing national public-health agencies into a national bureau of public health, with such power over sanitary conditions connected with factories, mines, tenements, child labor, and other such

[5] Memorial relating to the conservation of human life. 62 Cong., S. doc. 493, p. 43 (1912).

[6] Report on national vitality (1909). (Now out of print.)

subjects as are properly within the jurisdiction of the Federal Government and do not interfere with the power of the states controlling public-health agencies." The Independence League party of 1908 adopted an even broader plank on this subject.

In 1908 President Roosevelt appointed a commission consisting of Charles D. Walcott, J. R. Garfield, W. L. Capps, William Crozier, and Gifford Pinchot to study the organization of the scientific work of the government. On November 13, 1908, this commission made a report to the President recommending that all bureaus relating to public health be transferred to the Department of the Interior.[7] In his last annual message to Congress on December 8, 1908, Mr. Roosevelt urged Congress to coördinate federal health activities, saying, " . . . The first legislative step to be taken is that for the concentration of the proper bureaus into one of the existing departments. I, therefore, urgently recommend the passage of a bill which shall authorize a redistribution of the bureaus which shall best accomplish this end."

Efforts During the Taft Administration. President William H. Taft, in his first annual message to Congress, on December 7, 1909, made a strong plea for a national bureau of health,[8] a matter which he had espoused while Secretary of War. In March, 1910, a bill to this end was introduced in Congress. This bill, in suggesting the transfer to a new Department of Public Health of " all departments and bureaus belonging to any department, excepting the Department of War and the Department of the Navy, affecting the medical, surgical, biological, or sanitary service, or any question relative thereto," proposed to take over the Public Health and Marine Hospital Service; the medical officers of the Revenue Cutter Service, of the Pension Office, of the Indian Service, and of the Soldier's Homes; all hospitals; the Bureaus of Chemistry, Entomology, and Animal Industry of the Department of Agriculture; and the emergency relief service of the Government Printing Office.

Hearings were held on this bill by both Senate and House Committees. About thirty proponents and a dozen opponents appeared. The chief fault of the proponents seemed to be the lack of agreements on a definite, well considered plan. All these witnesses had general ideas, but no specific suggestions, and several of them con-

[7] Schmeckebier, The Public Health Service, p. 33.
[8] See page 27.

tradicted one another. The opponents represented various healing cults and leagues for medical freedom, so called. Their attorney was ex-Governor John L. Bates of Massachusetts. No action was taken by this Congress. The gist of these hearings was ably summed up in an article in the Journal of the American Medical Association by Dr. George B. Young, who also proposed a plan of his own as a substitute.[9]

In his second annual message to Congress, on December 6, 1910. President Taft decried the opposition which had arisen to the proposed national health department and again recommended adoption of the plan. Another and somewhat modified bill was introduced in 1912, and again a determined effort was made to induce Congress to pass it. In May of that year the President transmitted to Congress a report of the Commission on Economy and Efficiency which recommended coördination of health activities. This report specifically urged the transfer to a new Public Health Service of the Public Health and Marine Hospital Service, the Bureau of Chemistry, and the Division of Vital Statistics of the Census Bureau. It further proposed the granting of authority to the President to transfer to the new establishment, the whole or a part of any existing government organization engaged in public health work, except the medical departments of the Army and Navy.

Once again, opposition arose. Ex-Governor Bates had appeared at the hearings on March 30, 1912, and contended that the legislation was not needed, not wanted except by a few "political doctors," and that it was generally illegal and unconstitutional.[10] His argument is by no means convincing. The legal basis for federal health activities has been presented earlier in this book,[11] and clearly shows under what constitutional sanction such work may be exercised by the federal government.

Congress again took no action on the matter, although a law was passed changing the name of the Marine Hospital and Public Health Service to the Public Health Service (37 Stat. L., 309).

[9] Young, The proposed enlarged national public health organization, *Journal of the American Medical Association*, September 17, 1910, Vol. LV, pp. 979-89 (1910). See also National public health. 61 Cong., S. doc. 637 (1910).

[10] Bates, Public health bureau or service, 62 Cong., S. doc. 560 (1912). *Contra*, see Memorial relating to the conservation of human life. S. doc. 493.

[11] See pages 48, 61.

This law did little else except authorize extensive investigations by the service and increase the salaries of the commissioned officers.[12] After this lack of positive success, the Committee of One Hundred became inactive. Senator Owen, who was the author of the bill, has introduced a similar one at every session of Congress since.

Coördination During the World War. No further attempt to achieve correlation of federal health activities was made until 1918. In order to coördinate all these activities in the interests of efficiency during the war with Germany, President Woodrow Wilson, on July 1, 1918, issued an executive order placing practically all health work of the government under the Public Health Service.[13] This order read as follows:

> WHEREAS, in order to avoid confusion in policies, duplication of effort, and to bring about more effective results, unity of control in the administration of the public health activities of the Federal Government is obviously essential, and has been so recognized by Acts of Congress creating in the Treasury Department a Public Health Service, and especially authorizing such Service "to study the diseases of men and the conditions influencing the propagation and spread thereof" and "to coöperate with and aid state and municipal boards of health";
>
> Now, therefore, I, Woodrow Wilson, President of the United States, by virtue of the authority vested in me as Chief Executive, and by the Act "authorizing the President to coördinate or consolidate executive bureaus, agencies, and offices, and for other purposes, in the interest of economy and more efficient concentration of the Government," approved May 20, 1918, do hereby order that all sanitary or public health activities carried on by any executive bureau, agency, or office, especially created for or concerned in the prosecution of the existing war, shall be exercised under the supervision and control of the Secretary of the Treasury.
>
> This order shall not be construed as affecting the jurisdiction exercised under authority of existing law by the Surgeon General of the Army, the Surgeon General of the Navy, and the Provost Marshal General in the performance of health functions which are military in character as distinguished from civil public health duties, or as prohibiting investigations by the Bureau of Labor Statistics of vocational diseases, shop sanitation, and hygiene.

[12] The development and status of the Public Health Service in 1913 was well set forth in Kerr, J. W., Federal public health administration. Public Health Service, Reprint No. 112 (1913).

[13] See Warren, B. S., and Bolduan, C. S., War activities of the Public Health Service.

At the request of a confidential adviser of President Wilson, a group of prominent sanitarians drafted, in 1918, a plan for a national health policy. This plan, which has never been published, recommended that to carry out the policies formulated, there be a Secretary of Health and that there be grouped under his direction the Public Health Service, the Children's Bureau, the Division of Vital Statistics of the Census Bureau, and the Bureau of Chemistry. No definite action was ever taken on this matter. Late in 1918, Dr. F. L. Hoffman, of the Prudential Life Insurance Company, presented an elaborate plan for a United States Health Administration as an independent federal department, responsible directly to the President.[14] The pamphlet issued on this subject by him was a consolidation of two papers, one presented at the American Public Health Association Convention in 1918, the other, to the Commonwealth Club of California about the same time.

Proposed Reorganization of the Executive Departments. Shortly after Warren G. Harding was elected to the presidency, there was considerable renewed agitation for the general reorganization of the federal executive departments. On December 17, 1920, Congress passed a joint resolution creating a Joint Committee on Reorganization to study and report on this problem. On May 5, 1921, another resolution was passed, adding to this committee a representative of the President. With the President's designee as chairman, this committee proceeded to work out a plan for reorganization.

In the meantime, the President's personal physician, Brigadier General C. E. Sawyer, had been asked by Mr. Harding to consider how to improve the administration of the health and welfare agencies of the government. In fact, Dr. Sawyer asserted at hearings before Senate committees that he came to Washington to help the President develop a plan for a department of welfare.[15] Senator Kenyon introduced a bill for a Department of Social Welfare in 1921, at the first session of the Sixty-seventh Congress. This bill was later revised and the name of the proposed department changed to Public Welfare. It provided for a Secretary in the Cabinet,

[14] Hoffman, A plan for a more effective Federal and state health administration (1918).

[15] Senate hearings on S. 408, April 21, 1921.

with assistant secretaries for Education, Public Health, Social Service, and Veteran Service, and would have transferred to the proposed department various bureaus concerned with the subjects mentioned. No action was taken on this matter by the Sixty-seventh Congress, which adjourned on March 3, 1923, after having been in almost continuous session since April 1, 1921. Just before Congress adjourned, President Harding submitted a plan for reorganization of the executive departments, including a new Department of Education and Welfare, though no bill was introduced at this time. This plan for the department mentioned was more or less similar to the previous ones.[16]

Federal Board of Hospitalization. A Federal Board of Hospitalization was created on November 1, 1921, by the Director of the Bureau of the Budget (Mr. Charles G. Dawes) by direction of the President.[17] The purpose of this board was to coördinate the separate hospitalization activities of the Medical Department of the Army, the Bureau of Medicine and Surgery of the Navy, the Public Health Service, St. Elizabeth's Hospital, the National Home for Disabled Volunteer Soldiers, the Office of the Commissioner of Indian Affairs, and the United States Veterans' Bureau.

Brigadier General C. E. Sawyer was appointed Chief Coördinator and served as President of the board until late in 1924, when he was succceeded by the Director of the United States Veterans' Bureau. The other members have consisted of the three Surgeons General, the Superintendent of St. Elizabeth's Hospital, the President of the Board of Managers of the National Home for Disabled Soldiers, and the Commissioner of Indian Affairs. The board has held regular meetings on the first and third Mondays of every month.

The duties of the board were set forth as follows:

To consider all questions relative to the coördination of hospitalization of the departments represented.

To standardize requirements, to expedite the interdepartment use of existing Government facilities to eliminate duplication in the purchase of supplies and the erection of buildings.

To formulate plans designed to knit together in proper coördination the activities of the several departments and establishments,

[16] 67 Cong., S. doc. 302 (1923).
[17] Treasury Department, Circular No. 44.

with a view to safeguarding the interests of the Government and to increasing the usefulness and efficiency of the several organizations, and to report to the President thereon.

The board has no appropriation.

Sundry Proposals. A comprehensive scheme for reorganization of the administrative branch of the National Government was issued in 1923 by the Institute for Government Research. This plan, which had been evolved after many years' study, contained as one of its major recommendations a proposal for a new department of public health. It would take over the Public Health Service; the Division of Vital Statistics of the Census Bureau; the enforcement of the Pure Food and Drugs Law, as performed by the Bureau of Chemistry; the inspection of meat, as done by the Bureau of Animal Industry; St. Elizabeth's Hospital; the Columbia Institution for the Deaf; and it suggested consideration for the possible transfer of certain other institutional services, such as the Office of Superintendent of Prisons, and the Bureau of Immigration.

Studies made in 1922 under the auspices of the National Health Council had shown that there were at that time thirty-four different federal bureaus directly or indirectly interested in public health. The Washington office of the National Health Council prepared mimeographed reports on a number of these bureaus,[18] which were widely circulated and aroused much comment. An endeavor was made to bring the data to the attention of General Sawyer and Mr. W. F. Brown, Chairman of the Joint Committee on Reorganization, but the plans proposed by them took little cognizance of the relative importance of the various federal health agencies.

Hearings on the plan submitted by the President in the closing days of the Sixty-seventh Congress were begun shortly after the Sixty-eighth Congress convened. They were held from January 7 to 31, 1924, and have been printed in a volume of nearly eight hundred pages.[19] During the course of the hearings it was suggested by Dr. Hubert Work, Secretary of the Interior, that, in the

[18] Bureau of Mines; Division of Vital Statistics; Children's Bureau; Women's Bureau; Division of School Hygiene of the Bureau of Education; General Report on U. S. Government health activities; Health Section, Office of Indian Affairs; Division of Welfare, Post Office Department; Bureau of Animal Industry.

[19] Reorganization of Executive Departments. Hearings before the Joint Committee (1924).

event of the failure to establish the proposed Department of Education and Welfare, public health might well be transferred to the Interior Department. The Secretary of the Treasury, Mr. Mellon, and Secretary Hoover agreed that the Public Health Service did not belong in the Treasury Department, and the latter suggested that all public health activities should be put in one group.

A bill for a Department of Education and Relief was introduced in the Sixty-eighth Congress, following the report of the Joint Committee on Reorganization, which was made on June 3, 1924. The only health agency included in this plan was the Public Health Service, though St. Elizabeth's Hospital, a medical institution, would also have been transferred. This plan, like former ones, provided for inclusion of the Veterans' Bureau and the Bureau of Pensions. These agencies would have comprised about ninety-eight per cent of the new department, and for this reason and others, the plan was opposed by the sanitarians of the country and by the organized medical profession. It was also said to be unsatisfactory to the educators and to veterans' organizations. The *American Journal of Public Health* and the *Journal of the American Medical Association* each carried editorials condemning the proposition.[20] Although scheduled to pass by steering committees in each house, the bill did not pass and was not brought to a vote in either the Senate or House before this Congress adjourned on March 3, 1925.

[20] Federal health reorganization, *American Journal of Public Health*, February, 1925, p. 143. See also editorials in the *Journal of the American Medical Association*, May, 1923; December 20, 1924; January 10, 1925; and February 7, 1925.

CHAPTER XVIII

PROPOSAL FOR BETTER CORRELATION

The foregoing survey of the public health activities of the national government has revealed the fact that there are in 1926 seven distinct bureaus or divisions located in five different executive departments, which carry on public health work of such importance as to justify its classification as the major activity of the particular bureau or division. In addition, there are seven other bureaus which have an important but secondary interest in public health. Besides these fourteen administrative units which are directly concerned with public health duties, there are about twenty-five other federal agencies which are incidentally interested in public health, or carry on work of a purely medical character.

No one can study this situation without being convinced that it is, in general, an unsatisfactory one. These several services have been created, and they have had imposed upon them or have assumed their public health activities, in accordance with no carefully thought out plan. The result has been a diffusion of responsibility for the care of the public health, a failure in many cases to have an activity performed by that service which can perform it most efficiently and economically, and a duplication of activities, at least to the extent of a number of services doing work of precisely the same character.

The correction of this situation lies: first, in the assembling under a common direction of those services whose sole or major function is that of promoting the public health; and second, in providing that such united services shall, as far as practical administrative conditions will permit, act as a central agency for the performance of the public health activities of all other branches of the national government. Those two ends are sought and, it is believed, provided for in the plan set forth below. In formulating this plan the following considerations have been kept in mind:

1. That it is not desirable at this time to advocate any expansion of existing public health activities, such expansion, if any, being a matter that should receive independent consideration;

2. That the action proposed shall be of a character that will produce increased economy and efficiency in the performance of the work being done, and:

3. That this plan shall be one representing not merely a theoretically desirable proposal, but one that is feasible, especially with regard to the attitude likely to be taken by the services whose status and activities are affected by it. Though it is not possible to devise a plan that will meet with the full approval of all services affected, it is nevertheless desirable to give as much consideration as possible to conflicting interests and to seek to formulate a proposal that will meet the most strenuous opposition to be anticipated.

Assembling Under a Common Direction of Services Whose Major Activity is in the Field of Public Health. The first feature of the plan proposed is that all federal services whose major activity lies in the field of public health shall be brought together under the common direction of an Assistant Secretary in one of the departments. From a theoretical standpoint, a strong argument might be made in favor of the establishment of a separate Department of Public Health. In view of the fact that there is strong opposition to the creation of new departments, it is believed that the wiser course at the present time would be to limit the proposal to one which, while providing for the bringing together of the major public health services, will not involve adding to the number of existing departments. If at a later time it is thought best to have a separate Department of Public Health, this can be more easily accomplished when the grouping proposed has been made than could be effected when the public health services are scattered, as at present, among a number of departments. This is in line with the action taken when the Department of Commerce and Labor was created, with its subsequent division into two separate departments.

No definite recommendation is made here as to the particular department in which this group of public health services should be located. Such location should be determined in accordance with action that may be taken for the general reorganization of the administrative branch of the national government. If, for instance, a decision is reached to effect a grouping of all the services having to do with public education, the two groups might conceivably be joined in a Department of Public Health and Education. The important thing is to bring together under a common

direction the services whose major activities have to do with the same general function. Whether this shall take the form of a separate department or of a major subdivision of a department of broader scope, is a secondary consideration.

The report of the Congressional Joint Committee on Reorganization recommends a new Department of Education and Relief, with a Secretary. This department would have assistant secretaries for education, health, and veterans' relief. The only health agency involved in the plan as proposed is the Public Health Service, though, of course, there are others which ought to have been included. In the opinion of sanitarians and physicians, this plan is impractical. The suggested department would obviously consist mostly of veterans' relief, and health and education would be subordinated and submerged. The educators and veterans' organizations are said to be opposed to this plan, as are members of the public health profession. It is indubitably unsound.

The federal health services that it is believed should be grouped and given organic connection with each other through being subject to the same general overhead direction and control are the following:

1. Bureau of the Public Health Service (Treasury Department)
2. Division of Vital Statistics (Bureau of the Census, Department of Commerce)
3. Children's Bureau (Department of Labor)
4. Nutritional Research Work (Bureau of Chemistry, Department of Agriculture)
5. Division of Foods and Nutrition (Bureau of Home Economics, Department of Agriculture)
6. Medical Division (Office of Indian Affairs, Department of the Interior)
7. St. Elizabeth's Hospital (Department of the Interior)

A brief statement of the reasons for including each of these services in the proposed grouping follows:

Public Health Service. The Public Health Service should obviously be transferred to the grouping of public health services, and be made the nucleus of such grouping. Not only is this bureau the most important of all the public health services of the government, but its present location in the Treasury Department is manifestly illogical; the transfer would improve the organization of that Department by relieving it of a responsibility having nothing to do with its primary functions.

Division of Vital Statistics. Vital statistics form the foundation data for the consideration of public health. Such statistics have often been termed the bookkeeping of public health administration. They furnish the information through which needs for action are revealed, and they supply the means for determining the results of action. If such statistics are to be properly compiled and interpreted, they must be collected, compiled, and analyzed by the service having in charge the subject to which they relate. This is generally recognized in almost all governments other than the national government. In every state, except one, vital statistics are collected by the state health authorities. In that one state, Massachusetts, this activity comes under the jurisdiction of the Secretary of State, which is as illogical as having it in a commerce department. The present federal work in the collection of vital statistics has no direct relation to the other activities of the Bureau of the Census, and detaching it would disrupt no duty of that Bureau. As the handmaiden of public health, vital statistics should be compiled by the principal federal health agency The Public Health Service at the present time concerns itself with vital statistics in foreign countries and to a certain extent with vital statistics in the individual states and cities, and publishes in the Public Health Reports much material of a vital statistical character. It is illogical and improper to have two services performing work in this field. Furthermore, the proposed transfer would simplify relations between the federal government and the vital statistics services of the states, by having one instead of two federal services maintaining such relations.

The argument in favor of this transfer, as given by Mr. W. F. Willoughby in his volume dealing with the reorganization of the federal administrative services generally, will bear repetition here. He says:[1]

It would seem to be almost equally evident that the Division of Vital Statistics of the Bureau of the Census, Department of Commerce, should likewise find a place in that organization. There was a time, shortly after the creation of the Bureau of the Census, when there was a strong movement to concentrate in this bureau all of the statistical work of the government. It is now recognized that

[1] Willoughby, The Reorganization of the administrative branch of the National Government, pp. 245-47. Institute for Government Research, Studies in Administration (1923).

this was a move in the wrong direction. Statistical work is undertaken, not as an end in itself, but for the purpose of assisting in the solution of definite problems. If this work is to serve this purpose it is necessary that it shall be planned and its results analyzed and interpreted by the service having to do with the subject matter of the inquiry. The most competent body, for example, to determine the character of information that shall be sought regarding the operation of railroads and to interpret and otherwise utilize the data secured is manifestly the Interstate Commerce Commission. In precisely the same way the Department of Public Health is the service that can best determine the nature of the information that it is desirable to have regarding births, deaths, and morbidity, and to make the most effective use of the data that are secured. If vital statistics are to serve their maximum usefulness it is essential that many facts regarding births and deaths shall be secured; such, for example, as the age, color, nativity, occupation, etc., of the parents of children in the case of births and the same data together with the causes of death in the case of deaths. The securing of these facts involves many technical questions of classification, which only persons of medical training are competent to solve. Only persons with a professional medical training, moreover, can interpret to the best advantage the returns after they are compiled. One of the most important duties of a Department of Health is to keep in touch with the movement of births, deaths, and morbidity, to determine what diseases or casualties are on the increase, or the reverse, and, by comparison with other facts, to discover, if possible, the causes of the changes taking place. Vital statistics constitute by far the most effective means for doing this. It is thus of the highest importance that the service responsible for the care of the public health shall have immediate charge of work of this kind.

In further support of this position, two additional facts may be noted. The first is that the work of the Division of Vital Statistics has little or no relation to the other work of the Bureau of the Census. Detaching it from that bureau would thus in no way disrupt the organization of that service or interfere with its other work. The second is that that division now exploits only a part of the field of vital statistics—births and deaths in the United States; the securing for comparative purposes of data regarding births and deaths in other countries and regarding morbidity in this and other countries, in so far as such data are secured at all, is performed by the Public Health Service. This division of responsibilities is unfortunate. The transfer of the Division of Vital Statistics from the Bureau of the Census to the proposed Department of Public Health will correct this and insure one service having full responsibility for the collection, compilation, and exploitation of data bearing upon the matter of public health.

Children's Bureau. The claim has been made that the child is a unit, and that all work for the welfare of children, whether social, sanitary, medical, industrial, or general, should be kept intact, though Congress, incidentally, places educational activities for the child in a department other than that concerned with his general welfare. The fact that the child is a unit has been recognized in the proposed plan for federal health correlation by recommending that the entire Children's Bureau, now in the Department of Labor, should be transferred to the new arrangement. Child hygiene and maternal hygiene comprise extremely significant features of the work of this bureau. Child and maternal hygiene are integral parts of public health. They cannot be set apart from the general health problem. They are not labor questions, nor do activities in their behalf apply only to the industrial classes. The organic act of the Children's Bureau states that its duties shall be to "investigate and report . . . upon all matters pertaining to the welfare of children and child life among all classes of our people. . . ."

When hearings on the general plan for reorganization of the executive departments were held in January of 1924, the Secretary of Labor, James J. Davis, had placed in the record a letter which he had submitted to the chairman of the Joint Committee of the Reorganization of the Administrative Branch of the Government. In giving a brief outline of the similarity of some of the services rendered by bureaus of his department and outside agencies, he stated in this letter:

> Another relationship, somewhat along the same line, exists with reference to the parallel activities of the Public Health Service and the Children's Bureau. The nature of this overlapping is of such character that there is practically no limit to the duplication and resultant likelihood of confusion unless there is complete and harmonious adjustment of the respective activities.

No better argument could be used than this, from a most authoritative source, for the effective centralization of control of the child hygiene activities of these two bureaus. The unity of child hygiene with general public health has been recognized in the states, where bureaus or divisions of child hygiene are invariably in the state departments of health. According to a report of

[a] Hearings on S. J. Res. 282, p. 630.

the Children's Bureau itself,[3] the administration of maternity and infancy hygiene activities was in 1924 under the jurisdiction of state health authorities in every state, except three. In one instance, Colorado, it was under the Department of Public Instruction, and in two others, New Mexico and Idaho, under the Board or Department of Public Welfare, which also has supervision of all state health work. If the states, which have the primary responsibility over the protection and promotion of public health, recognize this unity, it should likewise be acknowledged by the federal government. The Children's Bureau should, therefore, be part of this central federal health agency, and all child hygiene work of the government should be properly correlated.

Nutritional Research: Bureau of Chemistry and Bureau of Home Economics. The most important activity of the Bureau of Chemistry of the Department of Agriculture is that of the administration of the Pure Food and Drugs Act. Due to the fact that the protection of the public against impure and adulterated foods and drugs has distinctly for one of its purposes the protection of the public health, there is much to be said in favor of this bureau being made one of the group of public health agencies. This transfer was in fact suggested in 1912 at the time of the agitation for a national bureau of health, and the proposal had the endorsement of the then Secretary of Agriculture, James Wilson.[4] Against this proposal the fact is pointed out that the problems dealt with by the bureau are as much economic as sanitary. This is partially true, for this pure food and drugs activity has two main purposes: one is the protection of the public health; the other is the protection of the consumer from fraud. Just what proportion these two functions take is a moot point. A study of the operation of the law indicates, however, that they are approximately equal, though perhaps with a slight inclination toward the economic phase.

Due to this dual character of the service, it is probably a matter of expediency that the proposal for the coördination of the health services of the government should not, at this time at least, call for

[3] The promotion of the welfare and hygiene of maternity and infancy, p. 52. Bur. Publ. No. 146 (1924).

[4] Letter to the Chairman of the Senate Committee on Public Health and National Quarantine, dated February 16, 1912.

the transfer of this entire bureau from the Department of Agriculture to the health service group. The bureau, however, engages in a special activity which, it is believed, more properly belongs to a public health service and can be more advantageously prosecuted by such a service. Reference is had to the research work in the field of human nutrition. It is desirable, therefore, to transfer this activity to a central health agency.

What has been said regarding the nutritional studies of the Bureau of Chemistry applies with equal force to the work of the Division of Foods and Nutrition of the Bureau of Home Economics of the Department of Agriculture. That division now conducts important investigations into the basic sciences underlying human nutrition. The nutritional activities of these two bureaus would more than justify their combination to form a bureau of foods and drugs in a central federal health agency, in order that their correlated nutritional studies might be available to all the people for their physiological advantage. This activity of the service is, to be sure, concerned with agricultural products, and its results reach farmers and rural dwellers, but the scope of the work is of national and not sectional interest. Public health knows no age, sectarian, or geographical limitations.

A bureau or division of foods and drugs in a central federal health agency could use the excellent extension facilities of the Department of Agriculture, just as they are used now. One of the much needed reforms in government operation is, in fact, better liaison between production in one department and operation or field service in another, to replace the all too frequent aloofness, which is now unduly prevalent between departments.

James Wilson, who held the office of Secretary of Agriculture longer than any other incumbent (1897-1913), and who was admittedly one of the great secretaries, wrote in 1912, "All the agencies of the Federal Government that contribute to the maintenance of the public health should be grouped together." The reason for assembling food and drug work as a part of public health are as cogent today as they were then.

In the states the administrative control of foods and drugs is about equally divided between public health authorities and agricultural departments, although in about a dozen instances there is

apparently an entirely separate department devoted to this subject.[5] Thus, out of the forty-eight states, only twenty have placed food and drug control under the Department of Agriculture.

Medical Division, Office of Indian Affairs. Health conservation for Indians has in recent years received considerable attention from the government. The Health Section of the Education Division of the Office of Indian Affairs was in 1923 raised to the status of a division called the Medical Division. A supervisor of public health nurses was attached to the office at the same time. Salaries of physicians in the Indian Office, which had been pitifully inadequate for many years, were increased by the Reclassification Act of March 4, 1923 (42 Stat. L., 1488). Appropriations for preventing diseases and giving medical care to Indians were increased from $370,000 for the fiscal year 1924 to $500,000 for 1925 (with a deficiency appropriation of $104,590), and to $700,000 for 1926. These increases, while raising the morale of the employees, and providing more and better facilities, have not altered the scientific attainments or the efficiency of the physicians of the Indian Office.

In order to do this, it is proposed that the physicians of the Indian Medical Service be attached to the Public Health Service for purposes of recruitment, training, and scientific direction, and then detailed to the Commissioner of Indian Affairs for administrative direction. This is entirely feasible, and would be somewhat similar to the present arrangement between the Public Health Service and the Bureau of Immigration, as now authorized by law. In medical and public health matters, the Indian physician would be responsible to a public health agency and not to a local superintendent of a reservation or agency, whose conception of medical matters is likely to be erroneous, as experience has too often proved. Such a proposed arrangement would result in better medical and health service to the Indian wards of the government. The promotion of their health is important not only for the benefit of the Indians, but has a definite influence on that of the civil population in the vicinity of the agency. State health authorities have for years been much concerned with the Indian health problem, and

[5] See Bureau of Chemistry, Directors of state offices charged with the enforcement of food, drugs, dairy products and feeding stuffs laws. (Mimeographed.)

are desirous that improvements in its administration should be consummated.

The proposal that health work for Indians should be done by the Public Health Service has been made before. It was opposed on the grounds that the Indian is a unit and that his entire welfare, social, hygienic, and educational, is so interrelated that one and only one agency could deal with the problem as a whole. This fact is recognized and given due weight in the proposed plan. In the interests of the public health the arrangement proposed is desirable and essential.

The transfer would not cause any large additional appropriations. Physicians in the Indian Medical Service now receive $1860 or $2100 a year, depending upon whether there is a hospital or not, the latter sum being paid where there is. In addition they get certain allowances. As assistant surgeons, passed assistant surgeons, or surgeons of the Public Health Service, they would receive from $2000 to $2400 a year base pay, with commutation allowances and retirement privileges.

St. Elizabeth's Hospital. The reason why it is recommended that St. Elizabeth's, the Government Hospital for the Insane, should be transferred is because a central federal health agency, if there were one, would be a more logical place for this medical institution than would the Department of the Interior, which now has control over it. Dr. Hubert Work, Secretary of the Interior, in testifying before the Joint Committee on the Reorganization of the Administrative Branch of the Government in January, 1924, said that St. Elizabeth's ought to be administered under the Public Health Service. At any rate, as an important laboratory of psychiatry and mental hygiene, subjects which are now conceded to be part of the general public health problem, this hospital belongs with the unified health activities of the government.

United States Veterans' Bureau. Having given the arguments in favor of the transfer to the public health services group of the agencies and work indicated, the reasons should be given why such a transfer is not recommended in the case of the United States Veterans' Bureau, which does so much in the way of the medical care of a certain class of our population. First, and primarily, the Veterans' Bureau is not a public health agency. Its work lies in the curative and not the preventive field. Secondly, the

size of this bureau is such that if joined with the public health agencies it would dominate that group, a result that would be highly injurious. There should, of course, be coöperation between the hospital work of all federal agencies.

Public Health Services as Agencies for the Performance of Health Work for Other Services. At one time it was thought that efforts looking to the improvement of the organization of the administrative branch of the government should take the form of seeking to concentrate in one service or department all activities of the same character. It is now recognized that this would be a great mistake. Examination shows that a clear distinction should be made between those activities which have as their purpose the performance of the function which is made the basis of the grouping and those which have as their purpose to aid in the accomplishment of some other function. The first class of activities are undertaken as an end in themselves; the second, merely as means to the accomplishment of some other end. To illustrate, the public health activities engaged in by the Public Health Service have for their direct purpose the promotion of the public health; those engaged in under the auspices of the Immigration Service in the way of the physical examination of immigrants have for their primary purpose the proper enforcement of the immigration laws. All activities of the first character, that is, the accomplishment of one definite aim, should, as a general principle, be concentrated in a single service or group of services under a common direction. Those of the second character should remain under the administrative direction of the services in which they are located. To attempt to remove them might disrupt such services and place them in a position where they would have entire control over the activities necessary for the performance of their function.

In providing for the performance of this second class of activities, the services concerned can pursue one of two policies; they can organize special divisions with their own personnel and equipment for the performance of such work; or they can have such work done for them by the central technical service whose major function is the performance of work of the character in question. Of these two policies, the second is undoubtedly the desirable one in all cases except where the work to be done is on a large scale and requires special equipment and personnel. It is impossible

for the services which need technical work of an incidental nature to secure, without undue expense, a personnel of the same competence and equipment of the same excellence as that possessed by the service having as its primary function the performance of such work. It is to the advantage of the former services, therefore, to make use of the facilities of the latter service wherever possible. It is also to the advantage of the latter service to do this work, since it increases its scope and thus broadens its personnel system from the career standpoint.

With respect to no class of technical activities is the foregoing policy any more sound than in public health or medical work. The government has in the Public Health Service a technical agency exceptionally well equipped as regards personnel and plant to perform all kinds of medical and health work. Its facilities should, therefore, be availed of by other services to the largest extent practicable. The desirability of this policy is now recognized and acted upon in a number of instances. Existing laws already authorize the detail of medical officers of the Public Health Service to the following bureaus:

Consular Service (27 Stat. L., 450).
Bureau of Immigration (39 Stat. L., 885).
Coast Guard (38 Stat. L., 387).
Alaska Division, Bureau of Education (38 Stat. L., 862).
Bureau of Mines (40 Stat. L., 146).
Bureau of Chemistry (40 Stat. L., 992).

It is recommended that this policy be extended to other services and especially to the Division of School Hygiene of the Bureau of Education, to the Bureau of Animal Industry, the Bureau of Dairying, and the Extension Service, all of the Department of Agriculture, and to the Bureau of Labor Statistics of the Department of Labor. All of these bureaus are doing public health work, though it is secondary to their general scope. It is further recommended that the President be authorized to direct in other cases that health and medical work required by services as activities incidental to their major function be performed by officers or scientific personnel of the Public Health Service detailed for that purpose.

If the two foregoing recommendations are put into effect, those, namely, of bringing together under a common direction all those

services which have as their prime function the promotion and protection of the public health, and then having such services act as executing agencies for the performance of the health and medical work of other services, there will result that concentration of work in this field which is highly desirable. Such a scheme would not and need not disrupt or interfere in any way with the integrity of the other services.

Proposed Grouping of Public Health Services as Exemplified by Other Governments. It is of interest to note that the proposal here made for the grouping of public health services under a common direction is supported by action that has been taken by most other governments of first rank. Indeed, many such governments have carried this tendency to the extent of setting up independent departments of Public Health. Such ministries, with cabinet officers at their heads, now exist in:[6] Great Britain, France, Germany, Canada, New Zealand, Poland, Jugo-Slavia, Czecho-Slovakia, Brazil and Hungary.

Most of these ministries have been established within the last decade, usually about 1918 or 1919. That of Great Britain came into being in 1919 and by its creation brought about a coördination of health activities in that country.[7] In other nations, where there are no separate ministries, national activities are usually conducted under the supervision of a single minister. Such countries often have national departments of health under a secretary of a department corresponding to our Interior Department.

Method of Achieving Coördination. Congress might see fit to adopt specific legislation providing for the transfer and coördination of federal health activities, or authority might be given to the President to effect by executive order such changes as would be desirable. There is some precedent for the latter procedure, for in the act of February 14, 1903 (32 Stat. L., 825), which established the Department of Commerce and Labor, the President was authorized to transfer other bureaus to the new department. This section of the law (32 Stat. L., 830) read as follows:

Sec. 12. That the President be, and he is hereby, authorized, by order in writing, to transfer at any time the whole or any part of

[6] See Calver, H. N., and Tobey, J. A., National health departments in review, *Nation's Health*, July, 1921. Also reports of the League of Nations.
[7] See Newsholme, A., The Ministry of Health (1925).

any office, bureau, division or other branch of the public service engaged in statistical or scientific work, from the Department of State, the Department of the Treasury, the Department of War, the Department of Justice, the Post Office Department, the Department of the Navy, or the Department of the Interior, to the Department of Commerce and Labor; and in every such case the duties and authority performed by and conferred by law upon such office, bureau, division or other branch of the public service, or the part thereof so transferred, shall be thereby transferred with such office, bureau, division or other branch of the public service, or the part thereof which is so transferred. And all power and authority conferred by law, both supervisory and appellate, upon the department from which such transfer is made, or the Secretary thereof, in relation to the said office, bureau, division, or other branch of the public service, or the part thereof so transferred, shall immediately, when such transfer is so ordered by the President, be fully conferred upon and vested in the Department of Commerce and Labor, or the Secretary thereof, as the case may be, as to the whole or part of such office, bureau, division, or other branch of the public service so transferred.

When the Department of Labor was created in 1913 (37 Stat. L., 736) the above law remained in force with respect to the Department of Commerce. In accordance with its provisions the President in 1925 by executive order transferred the Bureau of Mines and the Patent Office from the Department of the Interior to the Department of Commerce. He could, under this law, transfer federal health activities from certain departments to the Department of Commerce, though that is hardly the place for them. Such activities of the Departments of Agriculture and of Labor could not, moreover, be included under the terms of this law, nor could the Public Health Service, for a law was passed in 1904 (33 Stat. L., 104) providing that that bureau should remain under the Treasury Department until otherwise specifically provided by law.

A bill has been introduced in the Sixty-ninth Congress proposing to give the President authority to make transfers of bureaus, in accordance with the recommendations of a joint reorganization committee of five, consisting of two senators, two members of the House of Representatives, and a representative of the President. This bill, if passed, would permit the federal health reorganization in accordance with the recommendations of this committee, to whose attention could be brought the desirability of the scientific plan worked out.

Coördination of the Group of Public Health Services. If the decision is made to bring together, under the direction of an assistant secretary, the services indicated, the problem will then be presented of determining the extent to which each of those services shall maintain its separate integrity or be merged with some one of the other services, or a new distribution of activities among the several services be effected. It cannot be made too clear that the mere grouping of services under a common overhead direction does not necessarily carry with it the consolidation of such services or the effecting of any organic change in respect to the field or character of their activities. Neither does it necessitate any merging of the personnel of those services. At the same time, one of the prime advantages of the grouping of services engaged in the same field is that it lays the basis for a better coördination of such organization, a better allocation of activities among the services, and a more effective assignment of personnel according to capacities.

It would be a mistake at this time to attempt to determine in too great detail just what should be done in this way. Certainly it would be unwise for an act providing for the grouping of the service to attempt to handle all of these administrative problems by legislative provisions. The desirable method is that such an act, after setting forth certain fundamental considerations, should authorize the secretary of the department in which the group is located, with the approval of the President, to make such further changes in organization and distribution of activities as in his opinion are desirable. A number of provisions which are of importance in any plan for correlation, and which should be incorporated in any legislation to that end are, however, suggested.

To the Public Health Service, now the principal federal health agency, and almost of departmental size itself, there should be added the Division of Vital Statistics of the Census Bureau, the Medical Service from the Office of Indian Affairs, St. Elizabeth's Hospital, and the nutritional research of the Department of Agriculture, as mentioned above.

The divisions of the Hygienic Laboratory, the chief medium for the research of the Public Health Service, should be utilized to provide agencies for the solution of public health problems, facilities for the coördination of research of health authorities and

scientists engaged on special problems, and demonstrations of sanitary methods and appliances. Such facilities should be extended for stated periods to health officers and scientists engaged in special investigations, and officers should be detailed to educational and research institutions for special studies of scientific problems and for the dissemination of information relating to the science of public health. Thus would legislative sanction be given to a procedure of much importance, now often done informally.

The Children's Bureau has been coördinate with the Public Health Service since 1912. It is expedient to continue it so. Since the major function of this Bureau is in the field of public health, it belongs under the same direction as other federal health activities. Furthermore, the application of the technique of sociology to public health and a harmonious adjustment between the sociological, the medical, and the other phases of the modern science of public health, is eminently desirable. The Children's Bureau was created at the behest of social workers, and is manned largely by them, though it has of necessity a medical personnel. The Children's Bureau at present considers the child only up to the school age; the health of the school child coming within the purview of the Bureau of Education.

An assistant secretary in charge of public health activities, should there be one, should be selected solely with reference to the qualifications for the discharge of his duties. He need not be, and perhaps should not be, a physician, but he ought to be a person familiar with public health. By no means should he be appointed purely for political reasons, and with no previous experience in, or conception of, the science of public health. It has been suggested that the Surgeon General of the Public Health Service might be *ex officio* the assistant secretary for public health.

In connection with this suggestion for an assistant secretary for public health, it is interesting to note that the report of the President's Committee on Air Service, made public in December, 1925, recommended assistant secretaries for air service in the Departments of War, Navy, and Commerce. Air Service development, important as it is, is no more significant to the welfare of the United States than is the development and promotion of national vitality.

If a plan for correlation of federal health agencies should be adopted and a central federal health agency established, considera-

tion should be given to the eventual central housing of such an agency. At present the offices and laboratories of the various bureaus concerned with public health are widely scattered throughout the City of Washington. The Public Health Service itself occupies quarters in three different places, several miles apart, and two of these offices are of a temporary nature. The Hygienic Laboratory has its own building and is surrounded by some seventeen areas of vacant ground owned by the government. This site would be an appropriate one for the eventual central housing of all those federal health activities involved in the plan for coördination. This is a matter for the future, however, and while a desirable step, is not urgent.

Reorganization of the Personnel System. It is likely that the bringing together under a common direction of the public health services indicated will also raise certain questions in respect to the personnel systems of the several services so grouped; and especially in respect to the desirability of bringing such systems more in harmony with each other, and even of establishing a single personnel system for all the services.

At present there is a commissioned medical corps in the Public Health Service. All other scientific personnel of this bureau and of other bureaus doing health work have a civil service status, subject to the Reclassification Act of 1923 (42 Stat. L., 1488). It is desirable that in the future, all properly qualified scientific personnel, whether medical or non-medical, should have an identical status.

The method of appointment of dental officers, sanitary engineers, and other scientific personnel in the Public Health Service, selected for general service and subject to changes of stations, could, therefore, be the same as already provided by law for the appointment of commissioned medical officers; provided, that applicants for appointment should have had the training and experience equivalent to that required of commissioned medical officers in the regular service prior to original appointment and should be examined in the phase of public health in which they are specialists. Any sanitary engineer, medical, dental or other scientific officer already in the Public Health Service or in any other service transferred to the Public Health Service, after examination in the several branches of his profession before a board of officers convened

by the Surgeon General, might be commissioned by the President, in any of the several grades, corresponding to: assistant surgeon, passed assistant surgeon, surgeon, senior surgeon, and assistant surgeon general, as determined by the President on the recommendation of an examining board. The actual designations of these officers could comprise the name of the professions under which they have qualified, with prefixes according to grades to determine their equivalent rank.

Although essentially a civil organization, the Public Health Service has had this quasi-military personnel system since 1870. There are now about 200 commissioned medical officers in the service. It is claimed that the present methods of appointment and promotion of the professional workers, assuring security of tenure at a reasonable compensation, and providing a mobile corps of experts, are essential to the efficiency of the service. It is further stated that the Public Health Service would be disrupted if the system were abolished, and that the morale of the personnel would be destroyed. Some students of government, on the other hand, have questioned whether any bureau should be singled out for a special personnel system, especially when it is made somewhat comparable to that of the Army and Navy. The services which have had such special systems are the Public Health Service, the Coast Guard, and the Coast and Geodetic Survey. In 1924 Congress passed a law reorganizing the Foreign Service (43 Stat. L., 140) and provided for foreign service "officers," divided into nine classes, with appointments and promotions a matter of merit, and the whole foreign service established on a career basis. This act provides, furthermore, for very liberal retirement privileges. The personnel system for the public health services of the government might to advantage be made somewhat less military in character, to conform with the principles of this law regarding the foreign service.

An Advisory Council. It is highly advisable that the government services having to do with matters of public welfare should have the means of maintaining close connection with all other agencies operating in the same field. Intimate working relations between public and private agencies is essential if the best results are to be obtained. Especially is it desirable that such relations should be maintained between agencies of the national govern-

ment and those of the state and local governments performing the same functions. To this end it is proposed that provision be made by law for the creation of a national advisory health council, upon which should be represented the public health services of the national, state, and local governments, of private health organizations and of the public health, medical, and sanitary engineering professions of the country.

The Public Health Service already has an advisory committee for the Hygienic Laboratory. It was created by the act of July 1, 1902 (32 Stat. L., 728), and consists of three competent experts, to be "detailed from the Army, the Navy, and the Bureau of Animal Industry, by the Surgeon General of the Army, the Surgeon General of the Navy, and the Secretary of Agriculture, respectively, and five other members appointed by the Surgeon General of the Public Health Service, with the approval of the Secretary of the Treasury." The present members of this board are Lieutenant Colonel J. F. Siler, U. S. A., Lieutenant Commander J. R. Phelps, U. S. N., Dr. J. R. Mohler of the Bureau of Animal Industry, Dr. Simon Flexner, Dr. Reid Hunt, Dr. M. P. Ravenel, Dr. V. C. Vaughan, and Dr. W. H. Welch. Surgeon G. W. McCoy, Director of the Laboratory, is *ex officio* a member.

The Surgeon General of the Public Health Service, by the terms of this same law, is directed to call an annual conference of state health officers, or to call such a conference upon the application of not less than five state or territorial health officers. He may also invite some of the state health authorities to a conference whenever the interests of public health would be promoted by such a conference. The law does not say whether these state health officers are to advise the Surgeon General, or whether he is to advise them. Such conferences are held annually, however, and much of mutual benefit enures from them. Perhaps they would be even more valuable if the health officers were in conference with representatives of all the federal health agencies.

This proposed new advisory council would not be a national board of health. It would have purely advisory functions. Its purpose would be to keep the public health profession closely in touch with federal health work, to provide for a group of eminent supporters for a central federal health service, and to provide expert

advice on health matters. This might be accomplished by authorizing the increase of the present advisory board of the Hygienic Laboratory from eight to fifteen members, to become such a National Advisory Health Council. The Surgeon General of the Public Health Service should be one member and *ex officio* chairman, and he should appoint the others, with the approval of the Secretary.

APPENDICES

APPENDIX 1

RESOLUTIONS IN FAVOR OF CORRELATION OF FEDERAL HEALTH ACTIVITIES

Herewith are presented three recent resolutions advocating centralization and coördination of Federal health activities. They were passed separately by the American Public Health Association, the Conference of State and Provincial Boards of Health of North America, and the National Tuberculosis Association. These three associations, which are the most important extra-governmental agencies in the field of public health, have in the past adopted many other resolutions on this subject, all of the same general tenor:

American Public Health Association.[1] Resolution adopted at the fifty-fourth annual meeting held in St. Louis, October 22, 1925:

WHEREAS; Public Health activities are now undertaken by a number of different departments of the Federal Government, in accordance with existing law; and

WHEREAS; The correlation and centralization of these activities would conduce to efficiency, economy, and the enhancement of national vitality; and

WHEREAS; Public Health is an essential feature of government and as important to national progress as the development of agriculture, commerce, labor, fiscal affairs, public works, the common defence, justice, or any other branch of public service;

Be It Resolved, that the American Public Health Association urges the more effective centralization of Federal health work under the direction of a competent, trained official, who shall have the rank at least of an Assistant Secretary.

That such a central, unified department or arrangement shall include as many as practicable of the bureaus engaged in public

[1] The American Public Health Association is the professional society of the sanitarians of North America. Its five thousand or so members consists of health officials and other professional health workers.

health and preventive medicine, but shall not include the United States Veterans' Bureau, which is a relief agency.

That the President of the American Public Health Association is hereby authorized to appoint a committee of five to bring these resolutions and sentiments to the attention of President Coolidge and appropriate committees of Congress, and co-operate with other groups who are studying or promoting Federal Health correlation.

Conference of State and Provincial Health Authorities of North America.[2] Resolution adopted at its annual meeting, Montreal, June 5, 1925.

Be it Resolved, That it is the sense of this Conference that the now scattered health activities of the United States government should be more effectively coördinated and placed under the direction of a competent central authority, and that the Executive Committee of the Conference should act in an advisory capacity to the sanitarians and experts in political science now engaged in studying this important matter.

National Tuberculosis Association.[3] Resolution adopted at its twenty-first annual meeting, Minneapolis, June, 1925.

WHEREAS, The health activities of the Federal Government are now scattered through a number of different departments and independent establishments; and

WHEREAS, The President of the United States has repeatedly recommended the reorganization of all the Federal executive departments; and

WHEREAS, Studies are now under way to determine exactly what are the present activities and functions of the United States Government in the field of public health; therefore be it

Resolved, That it is the sense of this Association that the now dispersed public health activities of the Federal Government should be more effectively coördinated and placed under the central direction of a properly trained sanitarian; and furthermore

Be it Resolved, That this Association commends the efforts of President Coolidge to bring about an efficient reorganization of the executive departments and pledges its support to this movement to the end that national health may be promoted by a more efficaciously organized central Federal health agency.

[2] This conference consists of all the State, Territorial, and Provincial Health officers of the United States, Canada, and Mexico.

[3] This association has branches in every state, and also some 1200 local affiliated societies throughout the country.

National Health Council. On April 27, 1921, the National Health Council, which was then comprised of representatives of the following national health organizations: American Public Health Association, American Red Cross, American Social Hygiene Association, American Society for the Control of Cancer, Conference of State and Provincial Health Authorities of North America, Council on Health and Public Instruction of the American Medical Association, National Child Health Council, National Committee for Mental Hygiene, National Organization for Public Health Nursing, and National Tuberculosis Association, met in Washington, D. C., and passed the following resolution:

The National Health Council has learned with the greatest pleasure and interest of the desire of the President of the United States, as expressed in public utterances, to improve the health functions of the Federal Government through a better coördination of the health activities now distributed through various departments.

While the National Health Council is not authorized under its plan of organization to advocate or oppose specific legislative propositions, all of the constituent organizations represented in the Council have at some time positively endorsed the principle of uniting Federal health activities in one department.

In securing this object, the National Health Council pledges itself to transmit to its constituent organizations the views of the President and committees of Congress and to obtain prompt consideration thereof for such action as the individual societies might find practicable.

APPENDIX 2

SOME PERTINENT QUOTATIONS REGARDING FEDERAL HEALTH CORRELATION

Grover Cleveland

"I earnestly recommend the inauguration of a national board of health or similar national instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people."[1]

Theodore Roosevelt

"The work of the state and city boards of health should be supplemented by a constantly increasing interest on the part of the National Government. . . . This whole branch of the Government should be strengthened and aided in every way."[2]

William Howard Taft

"But there seems no reason why all the other [except from Army and Navy] bureaus and offices in the General Government which have to do with the public health or subjects akin thereto should not be united in a bureau to be called the 'Bureau of Public Health.'"[3]

"I renew this recommendation."[4]

Woodrow Wilson

". . . unity of control in the administration of the public health activities of the Federal Government is obviously essential. . . ."[5]

Warren G. Harding

"To bring these various activities (welfare) together in a single department . . . would make for increased effectiveness, economy, and intelligence of direction."[6]

[1] Second annual message, December 3, 1894.
[2] Seventh annual message, December 3, 1907.
[3] First annual message, December 7, 1909.
[4] Second annual message, December 10, 1910.
[5] Executive Order, July 1, 1918.
[6] Special message, April 12, 1921.

Andrew W. Mellon, Secretary of the Treasury

"The Public Health Service could be under the Secretary of the Interior about as well as where it is. What I mean is, it is not especially related to the Treasury in its work." [7]

Hubert Work, Secretary of the Interior

". . . I suggest that the Bureau of Public Health come into the Interior Department and that the Surgeon General be *ex officio* the assistant secretary." [8]

". . . the Public Health Service is one of the most vital organized responsibilities of the Government." [9]

Herbert Hoover, Secretary of Commerce

"Public health should also be put into a single group." [10]

"I think it (the Public Health Service) is an entire anomaly in the Treasury Department. . . . Normally that would go to the Interior. . . ." [11]

James J. Davis, Secretary of Labor

"The functions and scope of authority of the Public Health Service relate to labor and its conditions in several respects; and as to some of them the field of operations comes in contact with or overlaps certain functions of those bureaus which are at present under the jurisdiction of the Department of Labor." [Occupational disease studies cited.]

"Another relationship, somewhat along the same line, exists with reference to the parallel activities of the Public Health Service and the Children's Bureau. The nature of this overlapping in the same fields of endeavor is of such a character that there is practically no limit to the duplication and resultant likelihood of confusion unless there is complete and harmonious adjustment of the respective activities." [12]

[7] Testimony (p. 204) before Joint Committee on Reorganization, January 16, 1924.

[8] Testimony (p. 220) before Joint Committee on Reorganization, January 17, 1924.

[9] Same (p. 224).

[10] Testimony (p. 347) before Joint Committee on Reorganization, January 22, 1924.

[11] Same (p. 348).

[12] Letter to Walter F. Brown, January 26, 1924. Reproduced in the Hearings on Federal Reorganization (p. 631).

H. S. Cumming, Surgeon General, Public Health Service

"... several bureaus and divisions in several executive departments have been authorized by Congress to perform limited functions in certain specific fields. ... The logical conclusion recahed when one studies this question is to bring these several bureaus together and coördinate them under one administrative head. Obviously the several branches of public health work are so intimately related that the bureaus cannot work to the best advantage in different departments. ... Without question one administrative head should have supervision over all the civil and Federal health activities." [13]

J. W. Schereschewsky, Former Assistant Surgeon General, Public Health Service

"The Public Health Service and the Children's Bureau are doing identical work.

"If you want to be logical, I would say that all health matters should be under the direct charge of one Government agency; in the interests of efficiency no other answer is possible." [14]

Julia C. Lathrop, Former Chief, Children's Bureau

"I think the most important point at present ... is the question of whether there is a kind of coöperation between these bureaus in the Government which is scientific, effective, and economical, or whether it is better for us to go our separate ways. I am satisfied by the experience of the Children's Bureau that we cannot go our separate ways without steadily encroaching upon each other's fields." [15]

B. S. Warren, Former Assistant Surgeon General, Public Health Service

"Without question one administrative head should have supervision over all the civil Federal health activities. ... If all health activities are to be coördinated under one administrative head, the creation of a department of health with a Cabinet officer in charge, together with a transfer to it of all bureaus or parts of bu-

[13] Testimony (pp. 156, 157), Joint Hearings on a Department of Public Welfare, May 20, 1921.

[14] Testimony (p. 199) before Hearings on public protection of maternity and infancy, July 22, 1921.

[15] Testimony (p. 238) before Hearings on public protection of maternity and infancy, July 23, 1921.

reaus and divisions of the Government now engaged in such activities, is very generally considered the ideal method. Whether or not this is practicable at this time is a serious question." [16]

William M. Steuart, Director of the Census

"Such figures [annual mortality statistics] serve as the foundation of public health work." [17]

Charles H. Burke, Commissioner of Indian Affairs

"In its health work the Indian Service is not aiming merely to care for and cure the sick. This is one object, but not the only one. The main issue is to build up the vitality of the Indian people and to establish for them a new standard of living. Such an undertaking presents a formidable problem, involving a school-health program, an industrial program, and a great amount of preventive work and systematic attention to the physical welfare of children, in order that a stronger race may be developed." [18]

Charles W. Eliot, President Emeritus, Harvard University

"It seems to me highly desirable to attempt to develop a national movement, the purpose of which shall be to work out a better correlation of Federal health activities." [19]

W. F. Willoughby, Director, Institute for Government Research

"The fundamental reasons actuating this recommendation (for a department of public health) are that the promotion of the public health is now one of the recognized functions, that the Government is now maintaining a number of distinct services, the activities of which have no direct relation to the functions of the departments to which they are now attached; that in the interests of these departments it is desirable that they should be relieved of responsibilities and work in no way pertaining to their primary duties; and that only by grouping of these services in a separate department is it possible to adhere to the principle of having a strictly unifunctional character." [20]

[16] Reprint No. 575 from the Public Health Reports (p. 5), December 5, 1919.

[17] Annual Report, 1925 (p. 11).

[18] Annual Report, 1925 (p. 1).

[19] Letter to the author, dated June 16, 1924.

[20] Reorganization of the administrative branch of the national government. Institute for Government Research (1923). (p. 239.)

W. C. Braisted, Late Surgeon General, U. S. Navy; President, American Medical Association

"As a general proposition, I am firmly opposed to the disposition to saddle every public and semi-public enterprise on the government, a tendency arising from a profound misconception of government and its legitimate function, and often associated with a disinclination on the art of those displaying it to perform their own individual duty. But I am unqualifiedly in favor of a national department of health with a cabinet officer at its head, which shall by its very creation give a great object lesson to our people and shall correlate and vastly expand all the efforts now put forth for the improvement of the race, the prolongation of life, and the full development of physical capacity for work and production. . . ."[21]

Excerpts from Books on Public Health in which Federal Health Correlation is Advocated

The following quotations were assembled after this book had been completed. They are presented as interesting examples of the trend of opinion of writers on public health administration. Inclusion of these excerpts does not mean, however, that all of the sentiments in them are indorsed:

W. H. Allen, Civics and health (1909).

"Five economic reasons are assigned for establishing a national department of health:

1. To enable society to increase the percentage of exceptional men of each degree, many of whom are now lost through preventable accidents, and also to increase the total population.

2. To lessen the burden of unproductive years by increasing the average age at death.

3. To decrease the burden of death on the productive years by increasing the age at death.

4. To lessen the cost of sickness. It is estimated that if illness in the United States could be reduced one third, nearly $500,000,000 would be saved annually.

5. To decrease the amounts spent on criminality that can be traced to overcrowded, unwholesome, and unhygienic environment."

[21] *Journal of the American Medical Association,* May 1, 1920 (p. 1209). Presidential address.

A. C. Burnham, M. D., The community health problem (1920).

"In the first place there would be required a United States Department of Health, with a Secretary of Public Health. This department would include the present United States Public Health Service, now under the Treasury Department, the Board for Child Welfare now under the Department of Labor, the Indian Medical Service now under the Department of the Interior anl the various other medical activities under the Federal Government."

E. L. Fisk, M. D., Health building and life extension (1923),

"It is logically a function of the State powerfully to aid in controlling and increasing the physical vigor of the Nation.

"The first essential, therefore, is a federal department of health with a secretary in the cabinet.

"The health of the Nation should be the first consideration of a member of the Cabinet, devoting all his energies to the subject."

H. B. Hemenway, M. D., American public health protection (1916).

"It is the opinion of most sanitarians that several of these National bureaus should be combined into one department, under the leadership of a member of the Cabinet who should be, not a physician, but a sanitarian of broad experience, and with constructive ability. Such a head to the department should be permanent, in fact, though not by enactment. Such a department is far more important to the people of the land than two or three of the present departments . . . ."

J. Scott MacNutt, A manual for health officers (1915).

"From that time (1884) to the present there have been proposals for the establishment of a National public health service in the broadest sense, to embrace all of the present agencies, correlate them and enlarge their scope. . . . In the present agitation the true question relates not so much to the nature of the activities now carried on as to their coördination. The demand for a National health department should not be taken to mean that we have not, aside from questions of organization, a good National health service, for a very brief survey proves the reverse. . . . But the efforts to obtain such re-organization are evidently based on sound arguments, and, when questions as to the particular form of re-organization shall have been settled, will doubtless gain the desired end."

H. H. Moore, Public Health in the United States (1923).

"The time has now come when health officers must consider whether it is not practicable to devise some plan for centralized leadership which will not result in the usurpation of the powers assured the states by the federal Constitution. . . . Although our form of government recognizes the supremacy of the state in the control of sanitation within its borders, the growth of interstate commerce, increased speed in travel, war, and other forces have tended to unify the Nation. This nationalization of interests has seemed to bring about a new consciousness of a need for a coördination of health activities under a central head."

G. M. Price, M. D., Hygiene and public health (3 ed. 1924).

"National health being the greatest National asset, the prevention of National life waste and the conservation of National health becomes one of the most important problems and duties, and there is no reason why the appalling infant mortality, the unnecessarily great death-rate, and the loss of life by preventable diseases should not be a federal function, and not left to the politicians of various states and small hamlets and towns."

William H. Welch, M. D., Papers and addresses (1920).

"Dr. Billings was vice-president of the short-lived National Board of Health, established by the government in 1879. The withdrawal by Congress of support of this promising service of the government set back, we believe, for many years the advancement of the public health interests of this country."

G. C. Whipple, State sanitation, Vol. 1 (1917).

"There are good reasons for the assembling of some of these activities in a National Department of Health, and some time this will probably be done. On the other hand there are objections to the multiplication of cabinet positions. Meantime the Public Health Service is growing in power and efficiency, and is more and more coming to perform the functions of a Federal Department of Health."

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